Q&A

Your take

Daniel Gasparro, chief technologist at consulting firm Booz Allen Hamilton, on:
• Switching from frame relay to MPLS. • VoIP reservations. • Keeping an eye on carriers.

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NetworkWorld

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November 22, 2004 ■ Volume 21, Number 47

Cool Yule Tools

With the start of the awards season soon upon us, *Network World* joins the Grammys, the Tonys and the Academy Awards with the Globey — a prestigious honor for the coolest gifts for the holidays. The Cool Yule Tools gift guide has something for everyone on your list (including yourself). **Page 38**

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PHOTOS BY WALTER SILVER, ILLUSTRATION BY MICHAEL BACKUS

NEWSPAPER ■ $5.00

New and hidden risks dog VPN deployments

IP VPNs save, but they can carry 'gotchas.'

Google search cache spawns SSL fear.

■ BY TIM GREENE

While IP VPNs are widely accepted as an effective remote access and WAN technology that can save money, there are hidden challenges users should be aware of to avoid costly problems.

For instance, Concord, Mass., business consultancy Mercator Partners is scrapping the SonicWall IPSec VPN appliances it deployed in home offices in favor of IPSec client software on employees' PCs.

Although the appliances live up to their promise of segregating business machines from home machines via separate ports, it turns out the arrangement leaves open the possibility that family members still could tap into the corporate VPN, says Seth Cordes, IT manager at the firm.

Rather than risk that, Mercator changed technology and now just home PCs with the software can tap into the VPN.

Still, looking at the big picture, there are significant savings to be gleaned from VPNs, particularly site-to-site VPNs that replace traditional WAN links. "On average, customers are paying anywhere between $450 and $1,200 a month per site on dedicated circuits," says John Pouliot, a principal with WAN Strategies, an integrator and VPN service provider in Manchester, N.H.

With an Internet-based VPN,

See VPNs, page 53

It's proving tougher than anticipated to protect SSL VPNs from the voracious caching machine housed inside Google Desktop Search.

The search tool, which is in beta, still manages to store and leave in the open certain SSL VPN data despite the best efforts of tools to curb the search engine's activity.

Customers are concerned that SSL VPN data might be cached and indexed by Google Desktop Search on a machine that is out of corporate control, such as an employee's home PC or one borrowed by an employee visiting a business associate. "It would be a horrible thing to think that there was a trail being left behind of what went on in what we regarded as secure SSL VPNs," says Jim Abshire, manager of operations and systems development at Herr Foods in Nottingham,

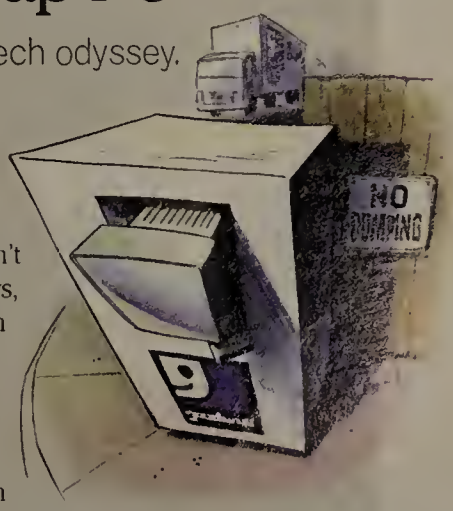
See Google, page 12

A Wider Net

One man's trash is another's cheap PC

Goodwill Industries' high-tech odyssey.

■ BY ELLEN MESSMER



People browsing through the Goodwill Industries thrift store in Santa Ana, Calif., aren't rummaging for used clothes or toys, although that and more are sold in spectacular volume in another part of the building. In this corner, thrifty computer shoppers are inspecting used computers at bargain prices: an HP Pavilion with NEC monitor for $99, a Toshiba Equium 7100M for $149 and a 450M-byte Dell for $49.99. Others are examining pre-owned D-Link Systems and Farallon network cards that sell for $2.99.

It was all once someone else's computer gear recycled by the Goodwill organization of Orange County, a nonprofit that

See Goodwill, page 16

DAN VASCONCELLOS

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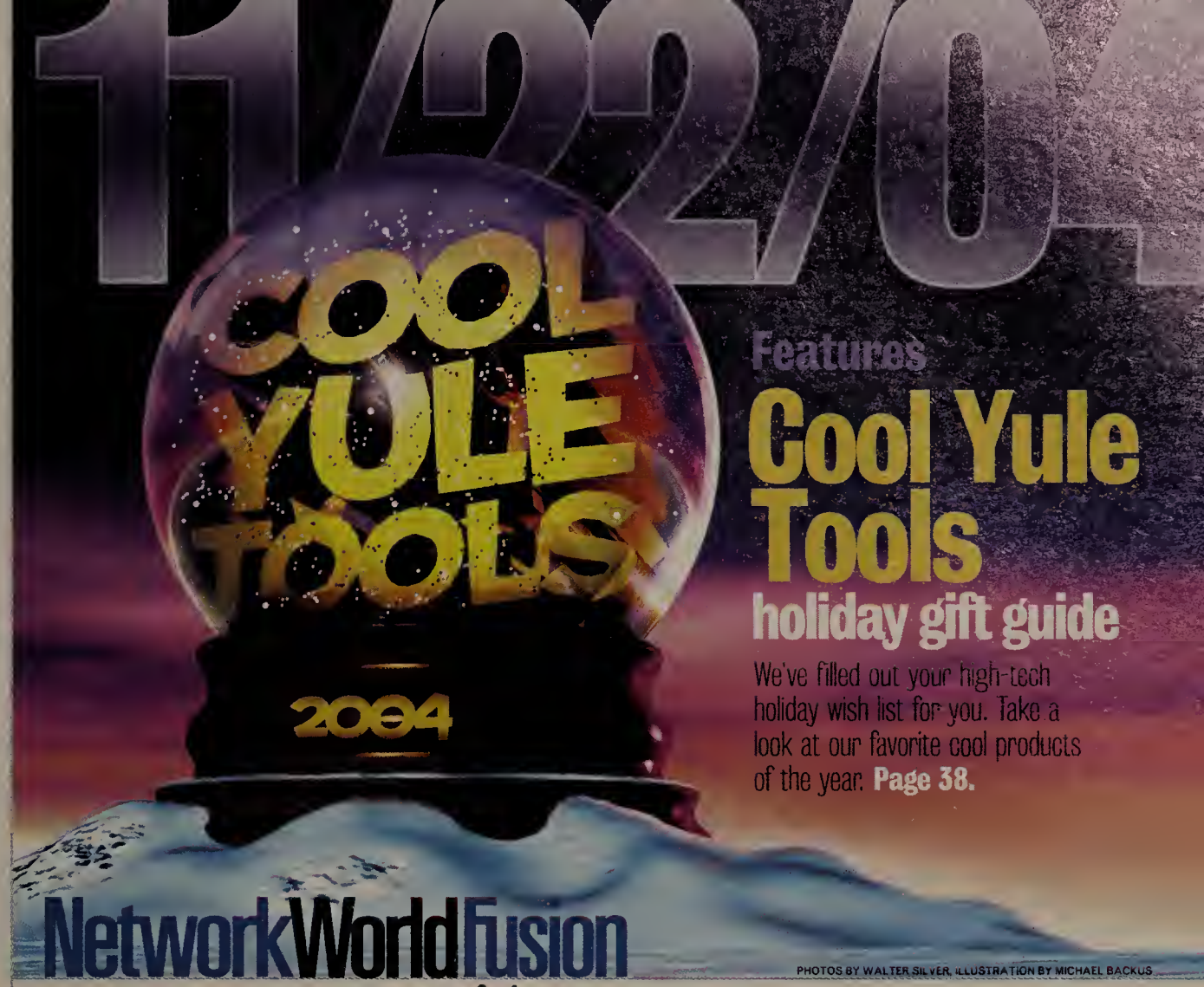
Scott Griffin, CIO of Boeing, does more with less.



Features

Cool Yule Tools

holiday gift guide

We've filled out your high-tech holiday wish list for you. Take a look at our favorite cool products of the year. **Page 38.**

PHOTOS BY WALTER SILVER, ILLUSTRATION BY MICHAEL BACKUS

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Exclusive

Cool Yule Tools

Not sure what to get the big kids on your list? Not sure what to put on your wish list? Check out our annual Holiday Gift Guide, where we give you the lowdown on more than 130 cool gifts, from cell phones and digital cameras to video games, robots, vending machines and more. **DocFinder: 4729**

Network World Fusion Radio: IBM's World Community Grid

IBM is looking to harness the power of the millions of Internet-connected PCs around the globe to work on important research projects (such as protein folding analysis) as part of its new World Community Grid initiative. We talk with Robin Willner, IBM's director of corporate community relations, about the Grid, how users can get involved and what projects will be tackled. **DocFinder: 4734**

Virtual Showdown: How best to patch

We hosted six patch vendors, three analysts and your peers in this virtual debate. See what the vendors had to say on patch testing, agent vs. agent-less approach, building secure code and more. **DocFinder: 4735**

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Columnists

Telework Beat

Telework for your health, Part 3

Net.Worker Managing Editor Toni Kistner looks at studies that show suburban sprawl promoting premature aging. **DocFinder: 4736**

Wireless Wizards

WiMAX as fiber replacement

The Wizards answer a reader who asks: "Can we use WiMAX technology as a backbone (say to replace fiber optics) with the same efficiency as fiber? We want to connect equipment between cities. Can we use WiMAX and have sufficient bandwidth?" **DocFinder: 4737**

Small-Business Tech

Storage breakthroughs, Part 1

Columnist James Gaskin looks at SATA drives and how they speed data transfer. **DocFinder: 4738**

HomeLAN Adventure

Time to secure our home networks

Columnist Keith Shaw examines a survey that finds consumers frighteningly ignorant of Internet threats. **DocFinder: 4739**

Seminars and Events

The 2005 IT Road Map Future Vision

Are you tasked with managing next-generation security? The new data center? WANs and LANs? Applications management? IP telephony? Wireless? Your new year begins early at this Welcome-to-2005 Tech Tour event. Qualified professionals attend free. **DocFinder: 4646**

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News Bits

Oracle cranks up patching machine

■ Oracle last week said it intends to begin issuing cumulative software patches for Oracle Database, E-Business Suite, Application Server, Oracle Enterprise Manager and Collaboration Suite on a quarterly basis next year, beginning Jan. 18. Oracle's other three scheduled patch-release updates will be April 12, July 12 and Oct. 18. Oracle's chief security officer, Mary Ann Davidson, said the quarterly software-patch updates would address any needed security fixes and non-security-related changes in Oracle products. The planned updates, which Oracle calls Critical Patch Updates, are intended to make it easier for Oracle customers to handle the software maintenance process, which typically requires shutting down servers and testing applications to ensure they run correctly after a patch is applied. Oracle has selected four days in the year it believes will let it avoid disrupting business processes such as end-of-quarter efforts to close the books on financials. Oracle will make an exception to the quarterly patch process if it has to issue a high-severity security alert because of a vulnerability discovered in any Oracle product, particularly if an exploit for it was known to exist in the wild.

Microsoft taps into Vintela, rips into Linux

■ Microsoft last week came as close at it might ever get to supporting Unix and Linux when it took a minority stake in integration vendor Vintela. Vintela has been cranking out software over the past few months to extend Windows-based authentication, management and monitoring capabilities to Unix, Linux and Macintosh operating systems. Neither Microsoft nor Vintela would reveal the size of the investment, although sources said it was less than $10 million. In addition to the infusion of capital, the pair also agreed to a set of commercial agreements that will have Microsoft providing Tier-1 support for corporate customers. The agreements also include licensing for a series of undisclosed Windows protocols that will tie Vintela's products more tightly to Microsoft's infrastructure software. Speaking of Microsoft and Linux, the software maker's CEO Steve Ballmer last week warned Asian governments that they could face intellectual rights-infringement lawsuits for using rival open source operating platforms such as Linux. Ballmer, speaking in Singapore at Microsoft's Asian Government Leaders Forum, said that Linux violated more than 228 patents. He did not provide any detail on the alleged violations, which the Linux community disputes.

COMPENDIUM

What's better than a Segway?

A Segway equipped with "a tablet PC, a GPS system, a video camera with night vision, a cell phone and mobile data network that uses a combination of Wi-Fi and cellular data transmission to allow him to stream live video and audio to the Internet." ***Read all about it at www.nwfusion.com, DocFinder: 4748.***

The Good The Bad The Ugly

Do you believe in magic? Those of you who think Microsoft's act is largely a combination of smoke and mirrors just might be on to something. Offering relief from managing complex, distributed systems, Microsoft Chief Software Architect Bill Gates last week told attendees of the IT Forum in Copenhagen that "The magic of software can eliminate this complexity." Gates made his address amid a cloud of smoke left lingering from the magic show that preceded him on stage. ➤

Spammer headed to slammer. Associated Press reports that Jeremy Jaynes cranked out as many as 10 million unsolicited e-mails a day via 16 high-speed lines, according to information presented at his eight-day trial earlier this month in Virginia. The jury recommended a nine-year prison term in what AP described as the first felony trial of a spam sender. Sentencing is set for February.

Avici gives CEO the boot. It's not easy competing with Cisco. Or Juniper for that matter. Carrier router vendor Avici Systems last week sacked its CEO after a 65% drop in third-quarter revenue. Steve Kaufman, Avici's chief since July 2001, has been replaced on an interim basis by board member William Leighton, who retired recently from AT&T, Avici's largest customer.

San Francisco jumps on public Wi-Fi bandwagon

■ San Francisco became the latest city in the country planning to build a public wireless infrastructure. Mayor Gavin Newsom said last week: "We will not stop until every San Franciscan has access to free wireless Internet service," he said in his annual state of the city address. "No San Franciscan should be without a computer and a broadband connection." He said the city already had made free Wi-Fi service available at Union Square, a central shopping and tourist hub, and would add access to several other sections of the city, including Civic Center around City Hall. Philadelphia, San Jose and other cities also have started setting up large areas of Wi-Fi coverage.

Not just Bangalore anymore

■ Southern India's Kerala state last week said it plans to attract overseas companies by building Smart City, a 1,000-acre site where technology companies from around the world will be invited to set up operations. The area will feature office space, residences, schools and an entertainment complex. It will include software developers and call centers — two of the Indian economy's fastest-growing sectors. Smart City will be created and managed by Dubai's Internet City, a free trade zone backed by the country's government. It is being built with an initial investment of $400 million from various investors. Dubai's Internet City offers foreign companies 100% tax-free ownership, no currency restrictions, easy registration, and licensing and protection of intellectual property, its Web site says. Indian states are competing with one another to court investments from IT companies, trying to emulate the success of the southern technology hubs of Bangalore and Hyderabad.

Cisco gets into Jahi

■ Cisco last week said it was buying privately held Jahi Networks of San Jose, a provider of network management appliances designed to simplify device deployment, configuration and management. Under the terms of the agreement, Cisco will pay approximately $16 million in cash and assumed options. The acquisition of Jahi is expected to close in the second quarter of Cisco's fiscal year 2005. Jahi was founded in 2003 and has 20 employees in San Jose and Hyderabad, India.

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Q&A

Your take

Network executives share their wisdom

Booz Allen moving to MPLS

Consulting firm holds off on VoIP.

With 15,000 employees and revenue topping $2.7 billion, Booz Allen Hamilton is one of the largest and most successful business and IT consulting firms in the world. This fall, Booz Allen is replacing an old frame-relay network from MCI with a Multi-protocol Label Switching infrastructure from AT&T. ***Daniel Gasparro,*** *chief technologist at Booz Allen, spoke recently with* Network World *Senior Editor Carolyn Duffy Marsan about how to select a viable carrier and why he's bucking the trend toward Internet telephony. Here are excerpts from their conversation.*

What is your role with regard to the company's global network infrastructure?

My group, which is Operations Services, has about 160 people worldwide. We have nine service offerings that we deliver to the firm: infrastructure; end-user computing; security; telephony; video; e-mail; collaboration; data management; and global business applications, including human resources and finance. Our mission is to support these services worldwide.

You awarded a three-year, $5 million contract to AT&T this summer for the new MPLS network. What are you trying to accomplish with this upgrade?

We want to simplify the number of technologies that we have deployed for our data network. Before, we had frame relay. We had point-to-point connections. We had DSL. We had VPN connections. So we had a hodgepodge of technologies. We are going to standardize the majority of our connections on MPLS. We are not converging our networks — that is moving voice and data over a common IP network. We've been pretty explicit that we don't want to go to voice over IP. We are going off of frame relay altogether. The reason is that we can do quality of service with MPLS that we couldn't do with frame relay.

What carriers did you consider for this upgrade?

We looked at Equant, Sprint, AT&T and Verizon. We also looked at having a mixed portfolio. We looked at the technology from each carrier and the risk. By risk I mean, are all of these vendors going to be around three years from now? Oddly enough, once we got down to the short list, there was not a whole lot of difference in terms of service delivery. They all had points of presence where we needed them. They all had MPLS. It came down to the customer service experience and how they had done with the quality of service they have been delivering to their current client base. We started asking questions about their strategy, which is not something that a lot of these procurement processes go through. We looked at how their infrastructure was designed, their reach around the world, who they were in partnership with and what was the long-term viability of the firm. Ours was a much more comprehensive process than I've seen other firms go through.

Having done all that analysis, what is your take on the state of the telecom market right now?

I don't think it's ever going to be settled. We're going to see some carriers surge forward because of the wireless buildup, which has been overshadowed in the last five years because of the carrier problems. It's refreshing to hear that certain carriers are now offering quality of service for wireless services. All the carriers are wrestling with how they can serve business better.

What were the top business drivers for your network upgrade project with AT&T?

The No. 1 driver was availability. And not just from a technology perspective but from the perspective of company viability. What you don't want is to find out that you're working with somebody who is suddenly going to be diverted because they have financial problems. In the not-too-distant second place was the question: Are they able to grow with us in terms of adding new services without adding significant cost? In the old days, if you added two offices, you saw your bandwidth and your costs jump by an equal percentage. In terms of my total operating budget and how it grows as a percentage of revenue, it has to be very controlled growth. When you're running an overhead business you have to be smart in how you apply those dollars.

What are the bottom-line benefits that your new MPLS infrastructure will provide to your consultants in the field?

Better network availability. It isn't so much network outage related as it is performance-related availability. The networks seemed to clog up after a while. So there is better performance and redundancy for offices that are considered hub locations. We didn't really make any gains financially because we didn't have back-up capabilities before and now we do. We got more capability for about the same cost.

Will any particular applications perform better on MPLS?

I don't know how much performance gains I'm getting with MPLS because I'm converting our No. 1 application over as well. We're switching from Netscape to Microsoft [for Web and messaging applications] right now. I read, and our technical staff read, that MPLS is a more forgiving network technology when you're oversubscribed. I am hoping that is the case. Right now we're going from the old network to the new network. We're not even taking a breather, and we're adding a whole new application suite. And it is our critical application at that.

You're doing a major network upgrade. You're upgrading the key office suite. What else are you trying to get done this year?

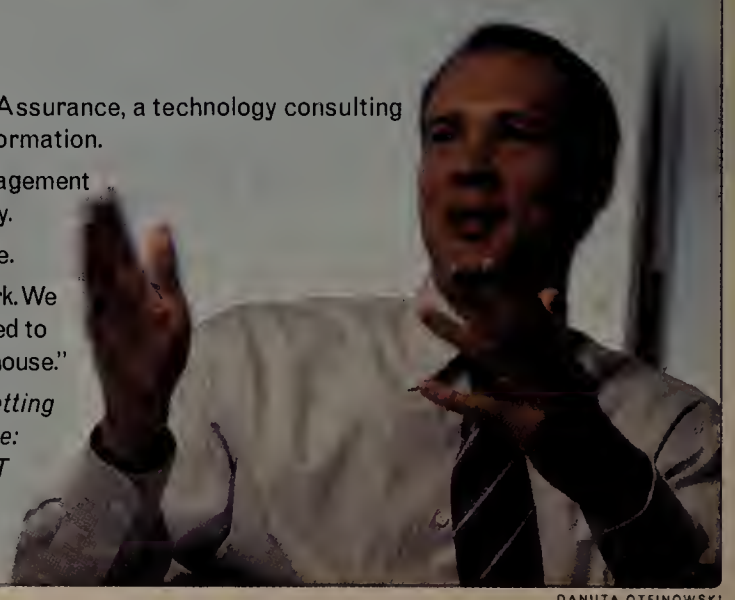
We're continuing to add a more comprehensive security infrastructure in terms of virus remediation and access control technologies. We're also focusing on end-user back-up capabilities, so we can back up users across the Internet. We're going to pure Web-based printing and file sharing. We're also going through a wireless rollout in key office locations. In my 10 years here, we've never done so many upgrades all at once.

What's your strategy with regard to wireless LANs?

See Booz Allen, page 9

Getting personal — Daniel Gasparro

Title:	Chief technologist
Organization:	Booz Allen Hamilton
Responsibilities:	Runs the Global Operations Services Group, which is responsible for PCs, networks and applications; development and management of the firm's IT Governance Mode; reports to the CIO.
Spending on network infrastructure:	12% of annual IT budget (which he would not disclose).
Staff size:	160 people
Tenure:	10 years
Previous job:	President of Network Quality Assurance, a technology consulting firm that focused on IT transformation.
Education:	B.S. in Research Design in Management from George Mason University.
First computer:	A "luggable" Compaq portable.
Home network:	"A wireless, 54M bit/sec network. We have multiple systems connected to it, and you can roam around the house."
Last good IT or management books read:	*Execution: The Discipline of Getting Things Done* and *IT Governance: How Top Performers Manage IT Decisions Right for Superior Results.*



DANUTA OTFINOWSKI

Microsoft's mgmt. wares trickle out

■ BY JOHN FONTANA

Microsoft last week released a handful of software products that are key elements in its drive to develop a comprehensive management platform for Windows, but users and experts say the overall plan needs to be clearer.

The company released Microsoft Operations Manager (MOM) 2005, a monitoring and performance tool; Virtual Server 2005; and the Virtual Server 2005 Migration Toolkit (see graphic). Two feature packs for Systems Management Server (SMS) 2003 for device management and operating system deployment also were made available.

Microsoft also released the first beta of Windows Update Services, a free Windows server add-on that automates the acquisition and deployment of patches for Windows and other software.

Next year, MOM 2005 and SMS 2003 are expected to be combined into a new product called System Center 2005 that will add data warehousing and reporting features.

The new products are part of Microsoft's Dynamic Systems Initiative, a 10-year plan to create a platform to support a self-managing Windows environment built around hardware, software and applications that can signal to the network their management needs. Rivals such as IBM, HP and Sun are developing similar utility computing platforms.

When Microsoft introduced DSI in 2003, users were happy with the management emphasis but saw it more as a vision and wondered how Microsoft would pull off the complex plan.

To give DSI some meat, Microsoft pulled under the DSI banner its core existing management products — SMS and MOM — and some server tools for resource allocation and operating system deployment.

"I keep watching DSI but until it gets more mainstream ... and it's something we know works, we won't mess with it," says Arch Willingham, vice president of Parks Construction in Chattanooga, Tenn. Willingham is a satisfied SMS user, but says, "there is nothing out there grabbing us and saying we need to do more."

Others are more optimistic.

"They definitely need to integrate all this management functionality," says Chris Sackmann, a systems developer for Rackspace Managed Hosting, a hosting provider with 4,000 Windows and 4,000 Unix/Linux servers. "They need to do it because it gives you better oversight into what your enterprise is doing and deeper insight into what each component within your enterprise is doing for your architecture."

Sackmann says Rackspace is adopting management components, including SMS 2003, MOM 2005 and a beta of the System Center reporting features. "From our perspective, the DSI direction makes total sense."

Still, Microsoft has major chores ahead, some analysts say.

"Microsoft is taking on big tasks," says Richard Ptak, an analyst with Ptak, Noel & Associates. "For years they have made billions on software with functionality that was good enough. Now they are realizing that 'good enough' has ratcheted up. They have to offer intelligently managed software." He says Microsoft appears committed to management, but "DSI hasn't been communicated effectively to the market."

Last week, Microsoft potentially fueled that skepticism by unveiling its latest DSI concepts — modeling, knowledge and life cycle — which it calls "the three pillars of DSI." Microsoft provided no details on what knowledge and life cycle entail but said modeling would provide health, configuration and task information on each managed network node.

"Health is how an application behaves across its life cycle, configuration is how an application is set up, and task is how an application behaves and what it does," says David Hamilton, director of the Windows and enterprise management division at Microsoft.

In the first half of next year, Microsoft plans to support the modeling concept with the release of Visual Studio 2005, which will introduce developers to a core component of DSI called the System Definition Model (SDM). SDM is defined by XML-based documents that are embedded into applications to communicate management and operational needs to the network.

Hamilton says Microsoft provides health models using MOM but won't start into configuration and task models until the release of Visual Studio 2005 and a capacity-planning tool called Indy, which will ship with the second version of System Center sometime around the release of Longhorn. The Longhorn client is slated for 2006, while the server is scheduled for 2007.

Mostly what Microsoft offers users now are products that have been retrofitted to the DSI model with promises of upgrades. ■

Anatomy of a platform

Microsoft is nearly two years into its Dynamic Systems Initiative, a 10-year plan to create a management platform for Windows. While Microsoft has a number of products under the DSI banner, experts say the company has to explain how it all comes together.

Available	Description
Automated Deployment Services	System imaging tool to auto-install operating system to hardware.
Windows System Resource Manager	Tool to allocate processors and memory, shipped with Windows Server 2003.
Microsoft Operations Manager (MOM) 2005	Ships with MOM Connector Framework, which supports third-party tools for integration with other platforms.
Systems Management Server (SMS) 2003 Service Pack 1, plus new feature packs	New feature packs for device management and operating system deployment.
Virtual Server 2005; Virtual Server 2005 Migration Toolkit	Virtualization platform plus tools to migrate operating system and applications from physical server to virtual server.
On deck	
Visual Studio 2005, with Team System and Whitehorse	Modeling tools introduce developers to the System Definition Model, a way applications signal management information to the network. Scheduled release: first half of 2005.
System Center	Combination of MOM, SMS, reporting tools and data warehousing. Scheduled release: first half of 2005.
Indy	Capacity planning tool for Version 2 of System Center. Integrates with Longhorn operating system and "Orcas" version of Visual Studio. Scheduled release of all three: 2006-2007.
Windows Update Services	Patch download and deployment server for use on corporate network. Scheduled release: First half of 2005.

Booz Allen

continued from page 8

We've put in place a multi-pronged approach. One is defining a policy of where you can and can't put wireless within the firm. Two is that we put in a series of physical firewalls to prevent users from getting IP addresses to connect into the wireless networks. The Cranite system, which is what we're using, is one of the most comprehensive wireless firewalls out there. Now we're putting wireless in eligible facilities. Because of the work that we do with our government clients, some of the facilities are not eligible. We even have a certificate of operations that certifies when was the last time we did external penetration testing and what the results were. The next thing is to roll out the software client with the keys on the desktops. This rollout is happening this fall, along with the other pieces. What we're doing is taking the desktops and laptops, and we're re-imaging all of them. There's a whole new suite of technology being rolled out with that. One of the things we're rolling out is Access Connections, which we had a big influence in designing at IBM. It is a tool that will let you build as many profiles as you want for accessing the network.

Once your MPLS network is in place, what do you see as your biggest ongoing concern about your network infrastructure?

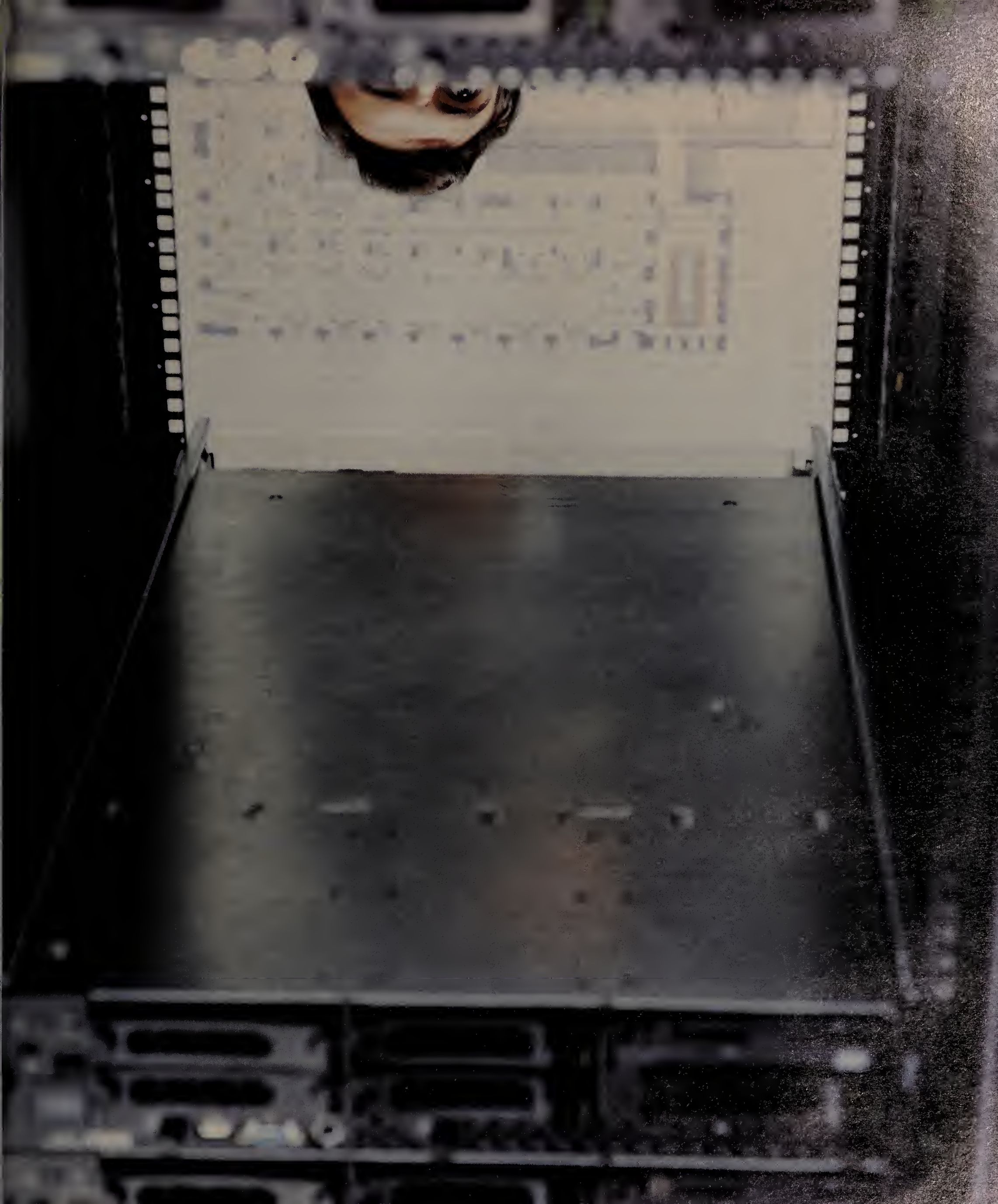
The only thing that does concern me is the ability of the carrier to support this network to my satisfaction. Nothing that I see in AT&T leads me to make that statement. My experience in this industry is that when we went from private to frame and from frame to MPLS, there's a learning curve for the carrier. MPLS isn't new to the point where you're bleeding edge, but it's still new enough where [AT&T] could make mistakes. I can't afford costly mistakes right now. More importantly, I cannot afford extensive outages. So my biggest concern is [AT&T's] knowledge and comfort level in supporting MPLS.

What was the biggest mistake you made during the network upgrade?

We had more problems with the teleconferencing than we did with the data systems. The one thing that you don't want to screw up — which is perceived to be a no-brainer — is the voice services. We switched our teleconferencing services from Genesis to AT&T. That involved extensive end-user retraining. That's an area where we didn't think we were going to slip on the banana peel and we did.

You mentioned earlier that you don't plan to migrate to VoIP. Why not?

The one service I cannot afford to monkey with and have go out on me is the phone. There is no evidence that I have seen that says [VoIP] is more reliable than dial tone. We have just implemented an enterprise resilience capability here in the firm. We have a [disaster-recovery site], and we are fully redundant in all these locations. The one service I've got to have is voice. In terms of the cost trade-offs, there are performance gains on the network side with VoIP. I've seen the statistics. But no one has convinced me that my labor costs will get cheaper. ■



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E-comm gains offset by escalating fraud

BY ANN BEDNARZ

Just in time for the start of the holiday shopping season, two vendors released research last week detailing a rise in e-commerce fraud. CyberSource published the results of its sixth annual e-commerce fraud survey, while VeriSign came out with its fourth Internet Security Intelligence Briefing, which details Internet usage trends as well as threat, vulnerability and fraud patterns.

According to CyberSource's tally, businesses will lose $2.6 billion to online fraud in 2004 — a 37% increase over 2003, when fraud losses totaled $1.9 billion.

Retailers have had some success limiting fraud loss, but they're spending more time and money doing so, says CyberSource, which specializes in electronic payment and risk management services for retailers.

This year fraudulent orders account for 1.8% of online sales, which is statistically level with last year's 1.7%, CyberSource says. The $700 million swing in fraud losses is offset, in part, by corresponding growth in e-commerce revenue: The 348 merchants surveyed expect their e-commerce revenue to increase by 39% in 2005.

VeriSign, too, logged a healthy climb in e-commerce sales. According to its report, which covers July through September of this year, e-commerce dollar volume has increased more than 25% since the third quarter of 2003.

Fraud schemes increasing

However, fraud schemes are growing even faster, and the level of sophistication and potential damage from Internet attacks continues to climb, VeriSign says. In particular, new hybrid attacks, such as those that exploit a system vulnerability to launch an identity theft, are being initiated by more sophisticated hackers looking for financial gain.

One e-commerce executive finds the diversity of attacks to be one of the biggest challenges in the fight against fraud. "Every time we feel like we have our bases covered, the fraudsters find a new way to get through," says the manager of Internet operations at a $2 billion specialty retailer who asked not be named.

Online commerce is a relatively immature business, and it's still going through growing pains, she says. Determining best practices for fighting fraud is a work in progress. "Key to this industry is to set those good practices and standards, and get everyone to adhere to them."

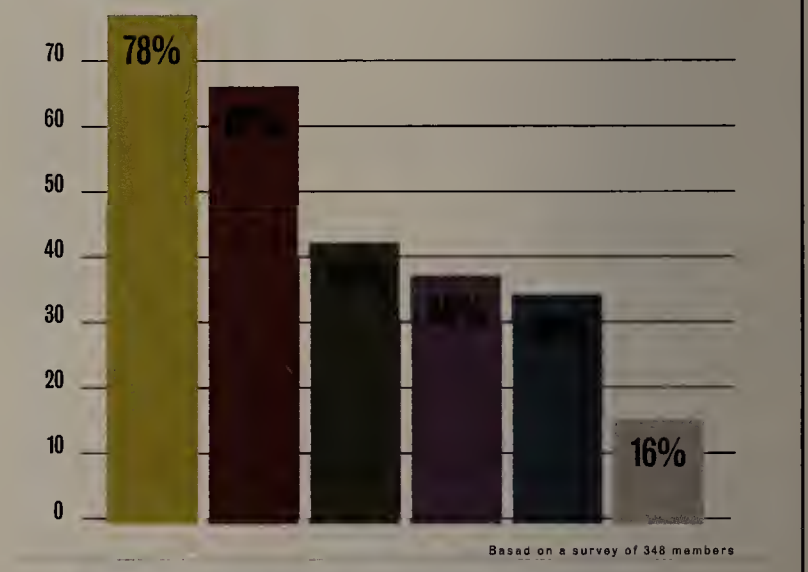
To try to stay ahead of the criminals, online business and merchants are using more tools than ever. CyberSource found the median number of automated tools in use today is five, and 40% of merchants use six or more. According to its survey, 82% of merchants use address verification services, 56% use card verification number checking, and 53% use internally built fraud screens.

Meanwhile, international e-commerce orders continue to spell more trouble for retailers than domestic orders. Merchants that accept orders from outside North America reject more than 13% on suspicion of fraud, CyberSource says. Among those accepted, 3.8% turn out to be fraudulent — which is nearly three times higher than the overall rate.

VeriSign's report identifies countries with the highest rates of originating fraudulent transactions. When fraud is measured as a percentage of legitimate sales, the Former Yugoslav Republic of Macedonia tops the ranking, with 100% of transactions originating within its borders deemed risky transactions, followed by Nigeria (87%) and Ghana (86%). ■

Fraud fears

Half of respondents to CyberSource's survey say online fraud will become a more serious business issue in 2005. Here are the most popular reasons why.



Playing Defense

Google Desktop Search software stores online work done in SSL VPN sessions, which creates a security threat. But there are measures VPN users can take to prevent problems.

- Ban use of Google Desktop Search.
- Tell users to shut off Google Desktop Search before initiating SSL VPN sessions.
- Use host-checking tools to shut off Google Desktop Search. These tools can detect if Google Desktop Search is running and block or limit access of these machines.
- Use virtual desktop technology — but verify it blocks the applications that can be accessed over the SSL VPN.

Google

continued from page 1

Pa., which uses Netilla SSL VPN gear.

To address concerns, for instance, SSL VPN vendors that sell versions of Sygate's Virtual Desktop software touted it as a way to quarantine and encrypt SSL VPN sessions. But they discovered during tests with *Network World* last week that Google Desktop Search could still grab the content of Word documents and cache it in readable form.

Since then, Sygate says it has developed a fix for the bug that it plans to distribute tomorrow. It also has sought the help of Google to create a foolproof way for SSL VPN sessions to vanish from hard drives without a trace. Google says it is considering the request.

Sygate says solving the problem is important. "This is our No. 1 priority. We're not working on anything else," says Gargi Mitra, a senior product manager.

Versions of Sygate's Virtual Desktop are sold by SSL VPN vendors Array Networks, Aventail, Juniper and Netilla, which together accounted for more than 67% of all SSL VPN gateways sold last year, according to In-Stat MDR.

While it seems Sygate has shored up its defenses against Google's relentless caching, other similar search software might yet prove troublesome to Virtual Desktop, according to Joel Snyder, senior partner of Opus One and a member of *Network World's* Lab alliance. The problem is that these search engines can hook directly into applications to cache their activity. If the Virtual Desktop doesn't recognize these hooks, the search tools can avoid Virtual Desktop encryption. "The next application to come along that hooks Internet Explorer or Word or whatever will have the same issue," he says.

Other desktop search tools are made by Blinkx, Copernic Technologies, ISYS Search Software and X1 Technologies. Yahoo and Microsoft are working on their own versions.

While not specifically designed to block Google Desktop Search, vendors put forth Virtual Desktop as a way to deal with what was being described in published reports as a hole the search tool was making in SSL VPN security.

Google Desktop Search periodically indexes and caches files and processes on PCs with the goal of letting users quickly search for files based on key words. It can find just about anything that has ever been done on the computer after the search tool has been installed — even after files have been deleted.

On the flip side, SSL VPN software attempts to secure Internet sessions between PCs and corporate networks. One virtue of SSL VPNs is that any machine with a browser can create a VPN session, but the drawback is that these machines might be unsecure home PCs, borrowed machines at a partner business or a machine in an Internet kiosk. Someone not authorized to access corporate data might use the machines later.

To prevent content of SSL VPN sessions from being stored on these unsecure machines, SSL VPN vendors have created cache cleaners that purge the files accessed during the sessions. Google Desktop Search gets around these cleaners by making its own cache that the cleaners don't wipe out.

SSL VPN vendors say they could wipe out the entire Google cache, but that would mean Google Desktop Search would then have to re-index and re-cache the hard drive — a lengthy process that might irk users.

Virtual Desktop behaves differently, creating what Sygate describes as an encrypted vault in which applications run and that wipes out records of activity during virtual sessions.

To deal with the problem, SSL vendor Whale Communications is writing additions to its host-checking software that scans remote machines before they are allowed to set up a VPN. If they fail security policies, which could require updated anti-virus software, for example, the SSL VPN gateway can block or limit access to SSL VPN resources. Other vendors say their host-checking software can be manually configured to do the same. ■

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Anti-spam vendors target the out-box

BY CARA GARRETSON

A pair of anti-spam vendors are tweaking their products to help customers keep a closer eye on mail emanating from their networks, not just trying to enter them.

Proofpoint's Content Security Suite comprises three modules designed to help a company keep confidential information inside its network and ensure outgoing messages comply with federal regulations. Separately, IronPort is enhancing its reputation filters to prevent spam from ever leaving a network.

"These e-mail hygiene vendors are looking for ways to differentiate themselves," says Matt Cain, senior vice president with Meta Group. "Certainly companies want to stop salacious spam from getting out, and intellectual property from leaving a corporation via e-mail. Then there's the notion of regulatory compliance ... large organizations have to take a fairly close look at their outbound filtering needs."

"That's what we're looking at, as part of our data security [strategy], to try and get some content security," says John Congiu, manager of enterprise messaging for Pitney Bowes in Stamford, Conn. The company has used Proofpoint's e-mail security software and appliance for a few months, and plans to add the new Content Security Suite next year. With 17,000 messaging users, Congiu says he believes some are intentionally or unintentionally sending e-mails out of the organization that include confidential information.

See E-mail, page 53

More online!

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Q A Outgoing IETF chair reflects, looks ahead

*Cisco Fellow **Harald Alvestrand** is stepping down in March as chair of the Internet Engineering Task Force, the Internet's premier standards-setting body. Alvestrand led the IETF for four years as the all-volunteer group of network engineers reeled from overwhelming workloads that stretched from the height of the Internet bubble through the corporate bankruptcies, unemployment and slashed travel budgets at the depths of the dot-com bust.* Network World *Senior Editor Carolyn Duffy Marsan spoke with Alvestrand about his tenure at the IETF and his plans for the future.*

What progress has the IETF made in improving the timeliness of its standards development work?

We've cut down on the number of [documents] stuck for dumb reasons. The RFC Editor has a backlog of several months. They've suggested hiring a new person to cut down the queue. That will probably happen next year. We're experimenting with changing the way objections are handled at the document-approval level. We're giving the working-group chairs more responsibility here. We also have shut down 11 working groups since August primarily because their work was done.

What will be the legacy of your four-year stint as IETF chair?

If the restructuring [of our administrative processes via cooperation with the Internet Society] is successful, that will be my legacy. What I hope is that my successor will be remembered as being the chair when the IETF ran more effectively and had a greater impact on the world.

What are the most important protocols developed at the IETF during your tenure?

SIP and iSCSI because they both created emerging markets. *[Editor's note: The Session Initiation Protocol supports real-time communications and is the foundation on which the IETF is creating voice, video and instant-messaging applications. ISCSI enables universal access to storage devices and storage-area networks over standard Ethernet-based TCP/IP networks.]*

I notice you didn't mention IPv6, the long-anticipated upgrade to IPv4.

IPv6 was a done deal before I came onboard. It's not something that I consider to have influenced. But I do enjoy seeing it moving from an experiment to being a common checkbox for network products. It does have further to go.

In several high-profile areas — most notably instant messaging and spam — the network industry turned to the IETF for a technical solution, and the IETF failed to deliver.

The IETF has gotten its act together recently on an instant messaging and presence protocol. We already had made progress on [a SIP-based approach]. And it seems that the hype level has gone down on instant messaging. Everyone at the IETF meetings uses Jabber. But you can't talk between Jabber and MSN because MSN sees value in keeping a closed network. Instant messaging is just like IPv6. Just because we have specifications doesn't mean the market will adopt them.

What about spam? Many people in the network industry hoped the IETF would come up with a technical solution to this problem.

I was at the Federal Trade Commission hearing on spam [this month], and the conclusion was that there is no silver bullet. Technology is one component, but we have to try multiple approaches. Spam is different than all but our security protocols in that you're not facing random chance, you're facing an intelligent attack. The question is how will spammers change their behavior when a technical solution is released. Technical solutions have been oversold. We have many [protocol] drafts that have come in related to spam. We closed [one spam-related working group] because we couldn't get consensus, but we will open others if we see enough interest.

What will you do when you step down as IETF chair?

I will still be a Cisco fellow, so I'm sure I'll find something interesting to do. I move back to Norway on July 4. I'm glad I came here to California for a year, but I'm glad to go back.

With all its problems, is the IETF still significant?

Yes. It's relevant because it makes the standards that people use. That this many people still come to our meetings [1,300 attended this month] shows that they're getting benefit out of it. The Internet revolution is over, and we have gone from the Internet being new and exciting to it just being part of the infrastructure. The technical work required for making the Internet work is still being done here.

What is the status of the IETF's multi-year effort to restructure its administrative processes?

We had a couple of specific proposals, and we had a community discussion about them in September. We received strong feedback that we should ask the Internet Society to organize an activity to be the contracts manager for the IETF. Then they would sign contracts for the IETF for administrative functions. We need to be one step removed from awarding contracts because the IETF has not declared itself a legal entity. [On Nov. 10], I officially declared consensus on one plan. We [soon] should have a transition team in place that will oversee the process and hire a person to be our administrative director. By March, when I step down, I'm hoping this process will be done.

Can the IETF fund and run its thrice-yearly meetings in the interim?

Yes. CNRI will continue to support the IETF until the IETF decides what it wants to do. *[Editor's note: The Corporation for National Research Initiatives is a nonprofit organization run by Internet pioneer Robert Kahn.]* Right now, we have no contract with CNRI, just a gentleman's agreement going back many years. All our meeting fees go to CNRI, which contracts out with Foretec Seminars *[a for-profit event planning company]*. We get about $2 million a year in meeting fees that we use to run the RFC Editor and other functions. We want to put that under a common control model and make the relationships ordinary. That new process should be normalized by mid-2005. Then how we do contracts — whether there is rebidding or not — will be ordinary business practice.

Several high-profile people resigned from the IETF leadership during your tenure, saying the workload was too great. Is the IETF having more success at attracting volunteers for leadership positions?

We are hoping the new administration structure will help. Part of my workload has been dealing with the IETF secretariat. By moving those functions away from the IETF chair, I'm hoping that my successor won't have to deal with so much administrative work. As far as the nominating committee's process is concerned, people are willing to take on the job. They don't seem to have trouble finding candidates. ■

More online!

Find out more from Alvestrand, such as how the IETF has changed in the past four years.

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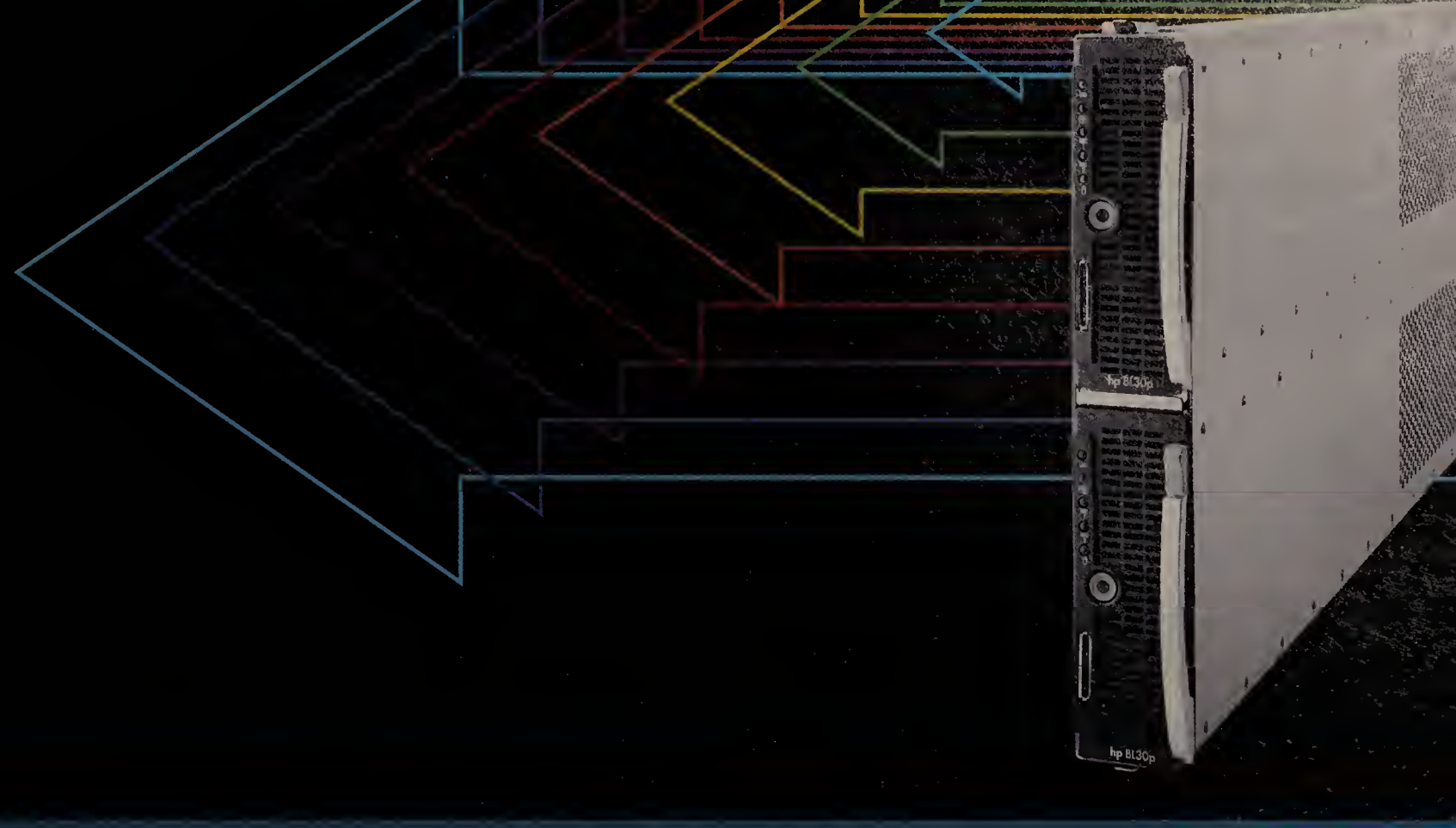

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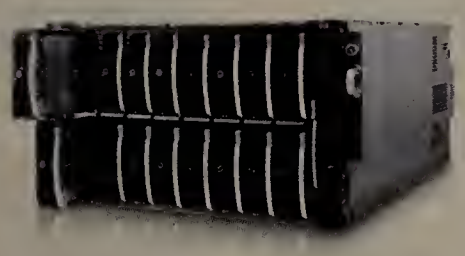

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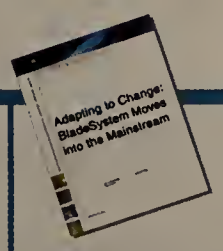

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Trapeze swings into virtualized WLANs

■ BY JOHN COX

Trapeze Networks this week is scheduled to release software it says can be used to divvy up a wireless LAN into 64 logical networks that cater to different groups of users and applications.

The new virtualization software for Trapeze's WLAN switch supports assignment of authentication, access, encryption and other security policies to different groups even though they share the same physical infrastructure of WLAN access points.

With the software, logical wireless networks also can be linked to 64 virtual wire-based LANs.

Rival vendors including Cisco and Symbol Technologies have offered the same basic capability. But none of them currently let customers layer so many logical networks onto the access points, says Bruce van Nice, vice president of marketing for Trapeze.

Trapeze had offered a version of the technology that allowed for just two logical networks for each access point. The company's revamped switch software, Mobility System 3.0, increases this to 32 per radio, with each thin access point having two radios.

Logical networks are created by giving each access point multiple Basic Service Set Identifiers (BSSID), which are essentially the media access control addresses of access points. Each BSSID has a test string that identifies the network to the client devices and identifies the access point's capabilities. Those capabilities, such as which authentication protocol or encryption scheme to use, can be different for each BSSID.

Also new in this release is a revamped Web interface for administering the Trapeze WLAN.

Trapeze also has introduced a Web application that lets someone like a receptionist quickly create network access accounts on a separate virtual WLAN for visitors, such as customers or contractors. Such a logical network lets them access the Internet, for example, without putting corporate servers at risk.

The software is available as a free upgrade for Trapeze customers and comes standard on newly acquired switches. ■

Goodwill

continued from page 1

refurbishes the best of what it finds as staff weed through the 30 truckloads of donated clothing, toys and electronics tumbling in each week.

Although not many Goodwill thrift stores across the country sell used hardware and software, sales are growing. Goodwill organizations also see a future in "e-waste," the disposal of computer parts in an environmentally friendly way.

"Computer salvage can be a real opportunity," says Randy Taylor, Goodwill's facilities director in Orange County, whose job involves tending to how the cast-off equipment gets processed as it comes into the 91,000-square-foot warehouse.

First, only the Pentium II and better computers among the hundreds that come in each week are kept for possible resale. Typically, that means 80% of the week's haul is destined for the dust bin of history. Goodwill sells them for about $3,000 per month to a Los Angeles recycler that dismantles them for parts and strips the gold from their circuitry in return.

Goodwill bargain hunting

A pre-owned computer system with keyboard and monitor costs between $[illegible] and $[illegible] at the Goodwill Computer Works store in Santa [illegible], Calif.

According to Robert Balderrama, a processor at Goodwill who plows through the mountains of donated items coming in off the trucks, the most surprising computer he ever unearthed was a 1989 vintage Tandem system from K-Mart. "It was brand new in the box and had never been opened," he says. "But of course, we couldn't use it."

It's not just PCs that reach Goodwill, but PBXs, point-of-sale devices, wireless access points and even CAD/CAM systems, given away in a modern society's rush toward something newer. Guillermo Tudela, the assistant manager in Goodwill's Computer Works store in Santa Ana, notes that the week that the Microsoft wireless router came to market, it appeared in the Goodwill donations, too.

"Things come in a jumble," says Corrine Allen, Goodwill's senior retail operations manager, who works with Taylor in deciding what to do with the incoming high-tech bric-a-brac. "Sometimes a computer could just be dropped off at the door at night."

These orphaned devices actually can be considered "illegal dumping," Taylor notes.

Some computer parts, such as cathode-ray tubes and lead content, pose environmental concerns. But Goodwill is looking at expanding its activities in handling such e-waste, especially because the state of California is keen on establishing a strict system of recycling that relies on accredited e-waste companies.

"The state has a program in which, if you have been a collector of e-waste, they will pay you a certain fee for that," Taylor says. "We've applied to be an accredited e-waste collector and so has the Los Angeles Goodwill."

PC makeover

Beyond such ambitions concerning e-waste, Goodwill in Santa Ana — whose primary mission is to employ the disabled — has found selling refurbished computers makes sense economically.

Orange County's two Goodwill Computer Works stores last year topped $655,000 in sales, although that is still just a fraction of the $24 million annually derived mostly from old clothing. Goodwill has hired staff specifically to refurbish computers and sell them.

Computer parts are another area of keen interest to Goodwill.

"There's a demand for computer parts," Tudela says. The Goodwill store has witnessed shoppers that drive great distances to scout for parts for older computers.

The Goodwill organizations, which were first started in 1902 and operate independently across the country, are starting to share their experiences more often about e-waste and computer sales, Taylor says.

He notes that at a recent forum for several of the regional Goodwill organizations hosted in Austin, Texas, managers shared ideas for expanding computer salvage and sales. Austin is said to be making more money in parts than selling entire computer systems.

Goodwill is considering how it might structure sales into four areas: motherboards, hard drives, power systems and memory. In the future, Goodwill and recycling partners might be teaching the disabled and disadvantaged workers it hires to dismantle computers to isolate needed parts. "For older systems, buyers can't find parts. It's like cars," Taylor says.

Junk dealer

About 80% of the computers donated to Goodwill can't be refurbished, so the organization sells them to a recycler, which pays about $3,000 per month.

Taking it online

The Santa Ana facility has already distinguished itself in another modernization: online selling.

Santa Ana's IT staff four years ago set up Goodwill's first Web e-commerce site, www.shopgoodwill.com, and it's thriving.

Now 105 separate Goodwill organizations around the country use the Web site to list about 6,000 items up for bid each day, including Barbie dolls, motor vehicles, jewelry, home decor and yes, computers, says Peter Lent, senior Webmaster and technology services manager.

The e-commerce site has surpassed the $20 million mark in sales and has grown to about $580,000 per month.

"It's set up similar to eBay," Lent says. Each Goodwill store is a separate seller, supplying Santa Ana with photos of the goods and indicating where winning bidders can pick up their purchases. Multiple T-1 lines into Goodwill help alleviate congestion or downtime at the online thrift store.

Behind the counter in the Computer Works building, a store clerk is preparing to ring up a sale for a $5 used microphone when the buyer suddenly has last-minute reservations.

"Suppose I get home and it doesn't work?" he anxiously inquires.

"Don't worry," the Goodwill store clerk assures him. "You can always bring it back." ■

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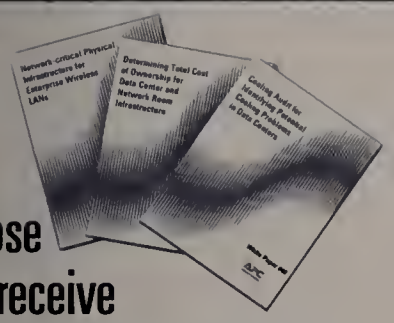

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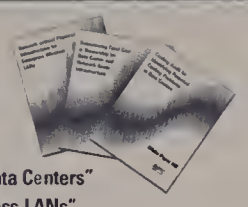

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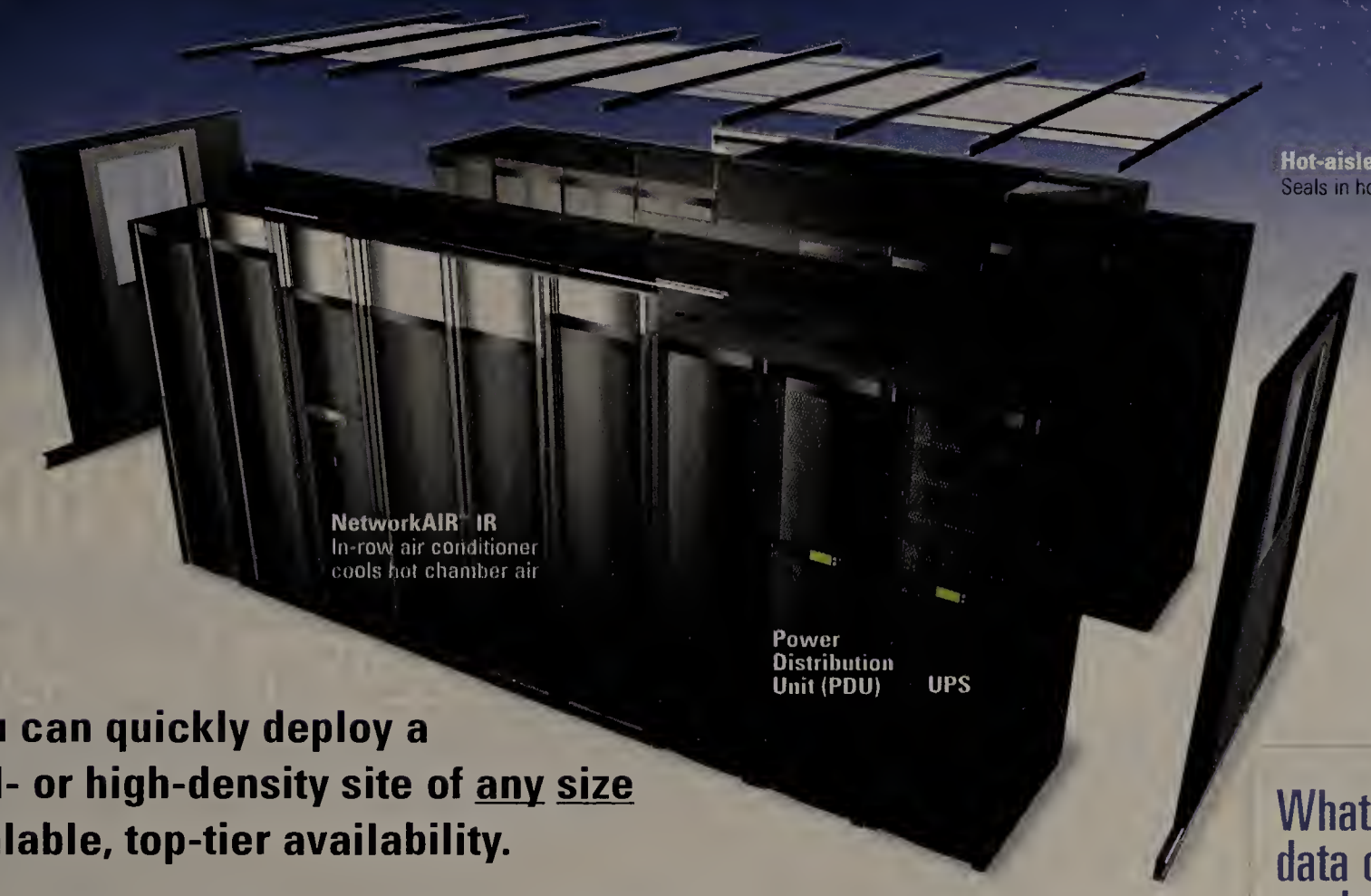

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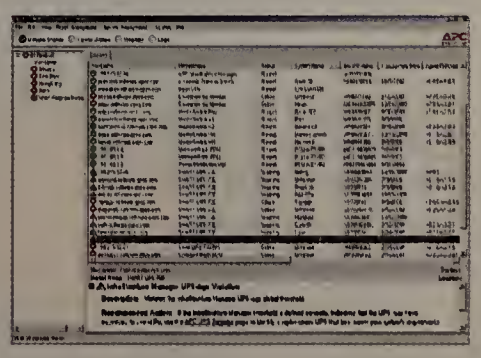

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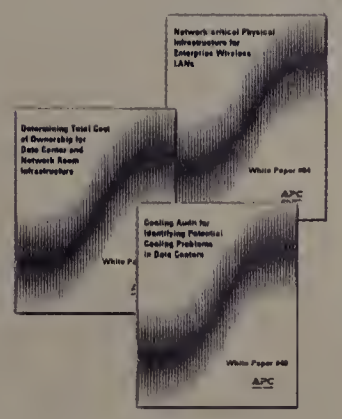

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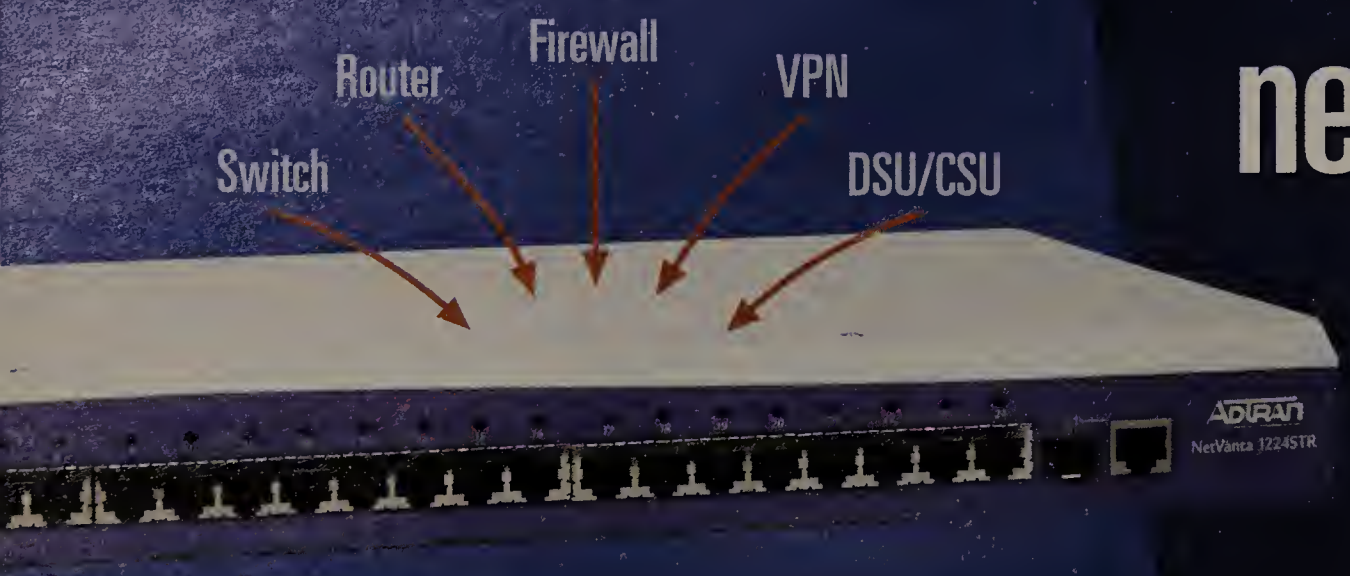

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Net Infrastructure

■ SECURITY ■ SWITCHING ■ ROUTING
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Mitel IP PBX gets wireless support

■ BY PHIL HOCHMUTH

Mitel Networks recently introduced a beefed-up version of its flagship IP PBX product that lets customers support more IP phones and applications than previous versions.

Improvements in Version 5.0 of the Mitel 3300 Integrated Communications Platform (ICP) are aimed at supporting more users with better applications and mobility options, the vendor says. The 3300 ICP now supports 65,000 IP endpoints on one system — up from 40,000 on the previous 3300 series. The vendor also has added Wi-Fi phone support for Spectralink wireless IP phones, and new applicants and management capabilities.

Up to 700 Spectralink Wi-Fi IP phones can run on one 3300 ICP. The wireless integration lets Spectralink handsets access all features on the 3300 ICP, including messaging applications. A Spectralink gateway and Wi-Fi access points are required for such a deployment.

Mitel's 3300 ICP now scales to 60,000 IP phones, up from 40,000 on previous versions.

The improved messaging applications in Version 5.0 include a personal auto attendant for individual users' voice mail boxes. The feature lets end users set up separate call routing options and recorded announcements for handling calls sent to voice mail.

Also on tap are the Session Initiation Protocol (SIP)-based Mitel 5212 and 5220 IP phones. The handsets can run SIP or Mitel's proprietary MiNet protocol, so they can work on a Mitel IPC or third-party SIP-based call server or messaging server.

The new IP phones also can be deployed in remote offices that are tied back to a 3300 IPC by a VPN connection or private IP WAN link. This lets the phones operate remotely as extensions off of a 3300 IPC. A new line interface module for the phones lets them fail over to a public phone network connection in case of a VPN or IP network failure.

While Mitel lags behind 3Com, Alcatel, Avaya, Cisco, Nortel and Siemens in the large-enterprise IP PBX market, it has been among the leaders in introducing new technology, such as the option for running SIP as the native call-control protocol on its IP PBXs, including the 3300 and SX-200 IPC for small offices (200 users). Mitel also has partnered with HP's ProCurve switching business, and Foundry Networks, for integrating its IP PBX gear with LAN switch equipment. Mitel has ported its softphone client technology to HP iPaq handheld computers with wireless capabilities.

Mitel has carved a niche for itself in the hybrid IP PBX market, where devices support both TDM and IP endpoints. (Some Mitel IP PBXs can support Mitel TDM phones, and some third-party TDM handsets, such as Nortel's.) According to Infonetics, Mitel had 16% of this market in the second quarter of this year, behind market leaders Nortel, with 29%, and Alcatel, with 25% of the market — estimated at $89 million for the quarter.

The 3300 ICP costs about $25,000 for the hardware, with per-user costs of about $300. The new messaging application costs about $70 per user, and the 5220 and 5207 IP phones cost $310 and $200, respectively. ■

Short Takes

■ **Motorola** last week agreed to buy **MeshNetworks,** a developer of technology and products for rapidly deployed, self-creating wireless mobile networks. Motorola already licenses software and distributes products from the privately held company. Its Motorola Ventures investment arm invests in the company. Financial terms of the deal, which is expected to close by year-end, were not disclosed. Mesh networking has potential applications ranging from corporations to home entertainment, for delivering data, video, voice and location information, Motorola said in a statement.

■ **Intel** and **LG Electronics** agreed last week to work together toward creating one international standard for wireless broadband Internet access. The agreement will see the two companies work on combining the Intel-backed WiMAX standard and the Korean WiBro (Wireless Broadband) standard. WiMAX and WiBro are based on different versions of the IEEE 802.16 standard.

Doing more with less — good or bad for start-ups?

TOLLY ON TECHNOLOGY
Kevin Tolly

For two days earlier this month, *The Wall Street Journal* ran prominent stories about the year-old tech recovery running out of steam. "Drag on high-tech recovery: Companies do more with less" was the above-the-fold, front-page headline on Nov. 9. At first glance, this would seem to be bad news for start-ups, but is it really?

In essence, *The Wall Street Journal* notes, correctly I believe, that there have been fundamental changes in how IT executives view the world over the past few years. Where in the past they might simply throw money at a problem, now they'll put considerable effort into seeking alternatives. *The Journal* views the 15% growth of the last year as a brief "catch-up" spurt, noting that it slowed to 9% in the third quarter.

A day later in *The Journal*, "Cisco adds to high-tech worries" (on page 3) noted Cisco CEO John Chambers' "tepid outlook for coming months," quoting him as saying "the company continues to face challenges, from the hesitancy of corporations to buy technology gear to a rising wave of low-cost Asian competitors."

It's interesting to see Cisco on the record about the Asian competitors. While "visibly Asian"-branded products from companies such as Huawei are now in the marketplace, many of the "American" LAN switches that we've bought for the past few years have been designed and manufactured in places such as Taiwan.

It previously had seemed that Cisco was immune to that competition. Just recently I had a conversation with an executive at a well-known company that had gone head-to-head with Cisco in the low-end switch arena two years back using Taiwanese technology. Although the company offered dramatically better price/performance, it made few inroads — or at least not the kind of progress it had calculated it would make. It was its experience, then, that customers still willingly would overpay for products that were near-commodity items.

So if *The Journal* has it pegged correctly, the "It's only money" days are over — even for Cisco. Not only will this make the aforementioned executive smile, but I think this is good news for start-ups.

When there was plenty of money to be thrown around, start-ups did get some of it but it would be my guess that incumbents got most of it.

Now it's becoming in vogue to find innovative — and cost-effective — solutions to problems. This certainly plays to the strengths of most start-ups. Of course, where a few years ago it might be sufficient to illustrate how "cool" one's technology was, today that needs to be married to ROI calculations.

Cisco's acknowledgement of erosion by Asian-origin products is important, too. Who knows what the field sales teams might say to try to sway customers to keep Cisco, but it doesn't appear to be working. Note that Chambers didn't tag these as "inferior" products — because they are not. And, that, of course is the problem — for Cisco.

And, as much as we IT people like to think of ourselves as individualists, we are also part of a herd. Now, with *The Journal* printing "success stories" of companies that have gone against the grain and delivered better technology for few dollars, more of us will be willing to follow that path.

So start-ups that can "read" what is going on and adjust their message and sales techniques to this new reality might find a fertile environment for their innovation.

Tolly is president of The Tolly Group, a strategic consulting and independent testing company in Boca Raton, Fla. He can be reached at ktolly@tolly.com.

CLEAR CHOICE TEST

Access router

Adtran serves up newest low-cost router

■ BY DAVID NEWMAN, NETWORK WORLD LAB ALLIANCE

As long as Cisco leads the router market, competitors will continue to come up with differentiators. With Adtran's new NetVanta 4305 access router, the differentiators are price, price, price.

Depending on configuration, the NetVanta 4305 — which Adtran began shipping in late September and will provide upgraded routing software at the end of this month — can cost thousands of dollars less than similarly equipped Cisco models.

As our exclusive Clear Choice tests show, the NetVanta 4305 is a modest performer. The beta routing software still has some rough spots, including scalability issues, but the price advantage might offset these, especially for managers of small or midsize enterprise networks.

The 1U systems we tested were equipped with two fixed-port Fast Ethernet interfaces and an optional module supporting eight T-1 (1.544M bit/sec) serial interfaces. The NetVanta 4305's base price includes support for IPv4 routing protocols and a stateful firewall. IPSec support is optional, as is a DSX-1 module for interconnection with PBXs.

The base NetVanta 4305 costs $2,500, and the system as tested is priced at $5,000. In contrast, a comparable Cisco 3725 base model lists at $8,500.

The NetVanta's command-line interface strongly resembles IOS, but lacks some features of its Cisco counterpart, such as redirecting command output through a pipe.

Testing performance

We measured performance of the NetVanta 4305 in seven ways: static routing; small- and large-table routing information protocol (RIP) routing; small-, medium- and large-table open shortest path first (OSPF) routing (see "How we did it" at www.nwfusion.com, DocFinder: 4726). We also tested IPSec tunnel capacity (see "Testing IPSec," DocFinder: 4727).

The static routing test was a best-case scenario; the goal was to show the maximum rate at which the NetVanta 4305 boxes would forward traffic without dynamic routing enabled. We then repeated the same test using either RIP or OSPF, and routing tables of various sizes. We tested in a back-to-back configuration, linking two routers with up to eight T-1 interfaces, and then repeated the tests on one router with traffic flowing between two Fast Ethernet interfaces.

In the two-router tests, throughput was slightly lower than line rate with medium or large frames, regardless of the presence or absence of dynamic routing (see graphic, right). Tests with 256-byte frames are the most noteworthy, because that size is close to the average frame length on many enterprise networks.

These tests uncovered two anomalies. First, Adtran's beta software supported only seven T-1s in the multilink PPP link, when dynamic routing was enabled.

Second, throughput with RIP routing didn't scale as high as OSPF, especially when we threw short frames at the NetVanta pair. Short-frame throughput with a 240-route table (the largest we attempted) was noticeably lower than with a smaller 64-route table.

Even with RIP's 15-hop limit, our "maximum" test case represented a relatively small network. Route redistribution and multiple paths easily can swell table size well beyond the maximum levels we used with the NetVanta 4305. With OSPF, throughput for both small and large frames degraded as table size grew.

Degraded throughput with RIP also was pronounced when we offered traffic between two Fast Ethernet interfaces on one router, where frame rates are much higher (see Figure 2, DocFinder: 4728). However, tests with short frames place the greatest strain on the device being tested, and no production network carries traffic made up exclusively of 64-byte frames.

Then again, even an entry-level $400 PC can saturate a 100M bit/sec circuit. Given the relatively low cost of processing power, control-plane routing events should have little if any effect on data-plane packet forwarding. Moreover, the choice of routing protocol should not have a marked effect on throughput.

Adtran officials say the company is working to optimize the routing code in the final release of this new code at the end of this month.

Another key metric — latency — improved in most cases when we enabled OSPF or RIP. For example, in two-router tests with static routing, we measured average latency of 2.017 millisec when forwarding 64-byte frames. But with RIP routing and 240 routes, average latency actually fell to 1.352 millisec.

In general, latency tests of a single router moving packets between Ethernet interfaces showed very constant results: about 0.460 millisec for 256-byte frames for most test cases. However, when we used OSPF and a 5,000-entry routing table, latency shot up nearly threefold to 1.439 millisec. Latency in the low milliseconds is unlikely to affect performance of any application by itself, but latency is cumulative. In a network made up of many NetVanta routers, latency might grow with routing table size.

The NetVanta 4305 doesn't match Cisco 3700 series routers when it comes to features or robustness of its routing code, but then again it doesn't cost nearly as much. While the routing code we tested had a few unresolved issues, the NetVanta 4305 might be a cost-effective alternative in small to midsize networks.

Newman is president of Network Test, an independent benchmarking consultancy in Westlake Village, Calif.. He can be reached at dnewman@networktest.com.

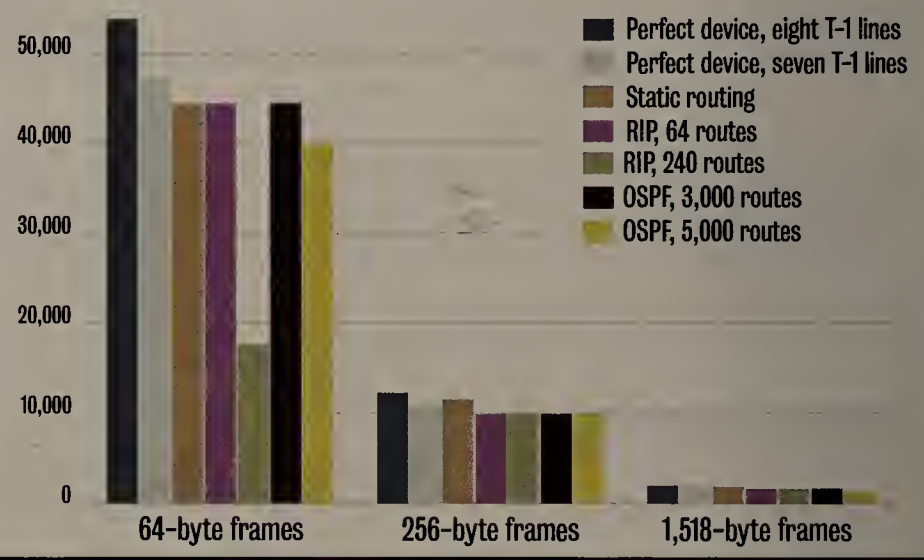
Thanks

Network World *gratefully acknowledges the support of Spirent Communications, which supplied the SmartBits traffic generator/analysis and TeraRouting, SmartFlow and Tera VPN test applications.*

Backbone throughput results

Adtran's NetVanta 4305 moved packets faster with static routes than it did with dynamic routing protocols. Tests using a pair of routers linked by a multilink PPP backbone uncovered two issues: First, the beta software Adtran supplied would support only seven T-1 circuits when OSPF or RIP was enabled. Second, RIP throughput with short frames took a big hit as table size grew.

Aggregate throughput (frames per second)



Net Results

NetVanta 4305

OVERALL RATING 3.60

Company: Adtran, www.adtran.com. **Cost:** NetVanta 4305 as tested, $5,000. **Pros:** Low cost; many features included in base price. **Cons:** Beta software wouldn't support eight T-1 connections with dynamic routing; limited scalability for RIP routing.

The breakdown

Static routing 20%	3.5
RIP routing 20%	2.5
OSPF routing 20%	4.0
IPSec support 10%	4.0
Features 15%	3.5
Price 15%	4.5
TOTAL SCORE	3.6

Scoring Key: 5: Exceptional; 4: Very good; 3: Average; 2: Below average; 1: Consistently subpar

Enterprise Computing

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Short Takes

■ **Advanced Micro Devices** plans to build security and virtualization features into its server processors by 2006, the company said during its annual analyst event this month. Two initiatives, called Pacifica and Presidio, are underway at the chip maker, said Fred Weber, AMD's CTO. Pacifica is a virtualization technology, while Presidio involves security features, but further details were not disclosed. Rival Intel has discussed its Vanderpool virtualization technology at recent conferences, but like AMD, has not provided specific details. Intel also plans to release chips with hardware-based security features around 2006.

■ **Microsoft** is stepping up its efforts to win **Novell NetWare** users over to its Windows Server 2003 operating system by offering migration products and support. Microsoft's push comes at a time when Novell is increasingly shifting its attention to Linux. Those who make the change can get a $600 credit for services by Microsoft partners for each Win 2003 license with 50 client access licenses purchased in a migration, Microsoft said. Microsoft also will offer training programs and a free tool called Services For NetWare to help users migrate from Novell to Windows. Microsoft has teamed with Quest Software to offer a 20% discount on software designed to help customers with more than 1,000 seats move to Windows.

n Hoping to harness a few million of the PCs not already running the SETI@home screen saver, **IBM** and **United Devices** last week launched a World Community Grid project designed to act as a clearinghouse for humanitarian computing efforts. Users who would like to see their computers work for the betterment of humanity every time they grab a coffee can download a 1.5M-byte software package that will turn their desktop PC into a number crunching node on a worldwide grid.

Dell delivers denser blade servers

PowerEdge 1855 systems exploit Intel Xeon microprocessors.

■ BY ROBERT MCMILLAN

Two years after launching its first blade server, Dell last week announced a follow-up product: the PowerEdge 1855, a system based on Intel's Xeon microprocessor.

Up to 10 of the dual-processor blades will slide into a new 7U chassis from Dell that has been designed to accommodate 10G bit/sec Ethernet and the power requirements of Intel's next generation of Xeon processors, which are expected to emerge in 2005.

The dense blade design, which lets systems share common network, power and cooling components, will let users squeeze as many as 62% more servers into their data center racks, when compared with Dell's rack-mounted 1U PowerEdge 1850 server, the company says.

Although his company has not yet purchased Dell's new servers, Darrin Hyrup, director of operations with Mythic Entertainment in Fairfax, Va., says the 1855 appears to be powerful enough to be a viable alternative to rack systems. With almost all the space in its data center being used, the company is looking to blades as a way to enhance performance. "This will allow us to expand our services without having to buy a lot more real estate," he says.

Up to 10 Dell PowerEdge 1855 server blades fit into the vendor's new 7U chassis.

Mythic, the creator of the online role-playing game Dark Age of Camelot, expects to standardize on a blade architecture in time for its next major title, Imperator, expected in 2006.

While blades have always taken up less space than rack-mounted servers, the extreme density of the blade architecture has forced some blade designs to use cooler, less powerful processors than did rack systems. However, the 1855 uses the same processor as its 1U rack counterpart.

"We were waiting for the technology to mature," Hyrup says. "Until recently, we weren't sure we were going to get the performance and space gains we had wanted."

Mythic also is interested in evaluating a low-power version of the 1855, which is expected within a few months, Hyrup says. He adds that he expects the new blade to have significantly lower power requirements than the 1855, which draws approximately 15% less power than the 1850.

One major issue for Dell customers is that the new blade chassis does not yet support switch technology from Cisco, says John Enck, a research vice president at Gartner. Support for this technology is expected in early 2005, but until that time it might make these systems less appealing to enterprise customers, which would have to do more work to integrate the systems into their Cisco environments, he adds. "What you'd pretty much have to do today is cable everything to the blade, which pretty much bypasses one of the major value propositions of blades," Enck says. The PowerEdge 1855 chassis start at $3,000, and blade servers start at $1,700.

McMillan is a correspondent with the IDG News Service.

Dell, Microsoft join forces on systems management

■ BY JOHN FONTANA

Dell and Microsoft last week announced a strategic partnership under which they plan to integrate their hardware and software management tools.

The first fruits of their labor will arrive in January, when the companies said they plan to ship a free add-on to Microsoft's System Management Server 2003 called SMS 2003 Inventory Tool for Dell Updates. The tool, which will be available on Microsoft's Web site, will combine the inventory and updating capabilities of Dell's OpenManage 4 systems management software with SMS 2003. The software distribution features of SMS 2003 will be enhanced to push out updates to Dell hardware.

Currently, joint customers must use the separate Dell and Microsoft management products to complete inventory and update tasks.

Last November, Dell introduced Dell Update Packages with SMS, a manual tool that was somewhat of a proof-of-concept for the SMS add-on. The new tool is fully automated in providing one view of Microsoft software and Dell PowerEdge servers on the network and what needs to be updated with patches or functionality upgrades.

The SMS add-on automates downloads of BIOS, firmware and drivers from Dell's Web site and updates from Microsoft's patching and other update sites.

"This release is meant to hit the No. 1 pain point today, which is managing the updates to your existing systems," says Eric Berg, group product manager for Windows Server.

Berg says the relationship with Dell is not exclusive, although Dell and Microsoft have a long-range plan to simplify management across their platforms. This would include the use of two standards specifications they are committed to today: the Systems Management Architecture for Server Hardware specification from the Distributed Management Task Force and WS-Management, a Web services specification that provides a common way for systems to access and exchange management information. ■

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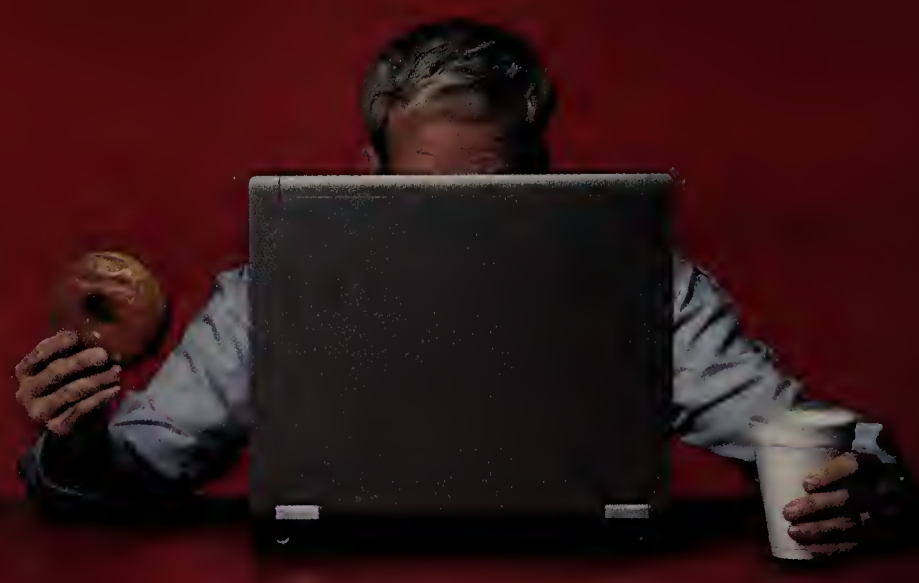

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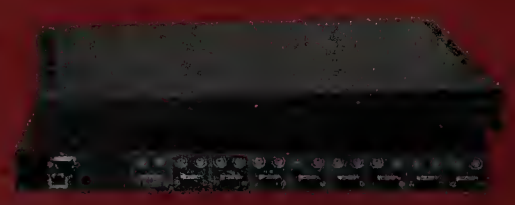

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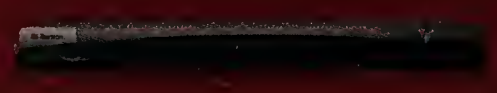

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Short Takes

■ **Tally Systems** recently released TS.Census License Compliance Suite 3.2, which gives users one place to track the software they own, the software that they have installed and how it's being used. The suite is designed so corporations can accurately assess licensing needs and control costs. Tally has updated the Software Compliance Module with tools to integrate license purchase data from SHI and SoftChoice directly into the suite. The module also has license allocation reports for anything from a full company to a single workstation. The Usage Module now tracks usage of server-based software. The Asset Inventory tools include support for Active Directory, and Tally has integrated its remote client installation tool into the suite. The software costs $21 per seat, per 1,000 users.

■ **Adobe Systems** by year-end is scheduled to release Version 7.0 of its **Acrobat** products, including a new free Acrobat Reader with reviewing capabilities. The client products all tie in to the company's Intelligent Document Platform, a set of elements Adobe wants to use to make PDFs with XML additions a common way to get data in and out of corporate systems. Acrobat 7.0 Professional users can create PDF files and let Acrobat Reader 7.0 users review and comment on them. The reader features a new reviewing toolbar that can be enabled when the PDF file is created. Included with Acrobat 7.0 Professional is Adobe LiveCycle Designer, a tool to design PDF forms that work with back-end enterprise systems that use XML. These special forms let organizations process data sent in PDF forms, so there's no need to re-enter the information. Adobe's Intelligent Document Platform competes with Microsoft's XML features in Office and InfoPath. The high-end Acrobat 7.0 Professional costs $449 An upgrade from selected preceding versions is available for $159. Acrobat 7.0 Standard is aimed at business professionals and costs $299, with the upgrade version priced at $99.

Vendors aim to tamp down spyware

■ BY ELLEN MESSMER

Ever-growing concern about spyware spreading like wildfire has vendors such as Configuresoft, LANDesk Software, McAfee and TippingPoint Technologies rushing in with an assortment of products aimed at putting out the conflagration.

Recent announcements include:

- TippingPoint's spyware filters for its UnityOne intrusion-prevention system.
- McAfee's Anti-Spyware Enterprise Edition Module, an add-on that works with its anti-virus software.
- Configuresoft's spyware tool kit for its Enterprise Configuration Manager product.
- LANDesk's Security Suite software that helps users track spyware infiltrations.

Customers testing some of these new anti-spyware products say they're helpful in controlling the blaze but not yet comprehensive enough to snuff out every dangerous spark.

"Spyware tracks every place that someone has been," says Bonnie Norman, system security engineer at Wellstar Health System, who is waging a battle against spyware on about 5,000 desktop machines used at the healthcare organization's hospitals and clinics in the Atlanta area. Wellstar uses the Internet to share patient information with authorized third parties, but spyware on machines can record this activity — an unacceptable proposition for any hospital, Norman says.

Wellstar, which had used the TippingPoint UnityOne IPS at its Internet access point to block a range of attacks, became an early adopter two months ago of the spyware filter that TippingPoint recently unveiled.

When Wellstar started using the UnityOne appliance last September to detect and block spyware downloads and outbound connections, the hospital system logged 8,000 spyware hits per month, she says.

Most of the dozen spyware types UnityOne's filter blocked, including BargainBuddy, were picked up by desktop users at Web shopping sites, Norman notes. IT staff also make use of log data generated by Novell's BorderManager proxy and SurfControl and WebTrends Web-monitoring tools to determine where spyware might come from.

Spyware tracking

Wellstar's IT staff are busy tracking down spyware-infected machines and often have to entirely re-image the desktop to eradicate the adware. This work has reduced the monthly spyware count to about 3,000 hits per month.

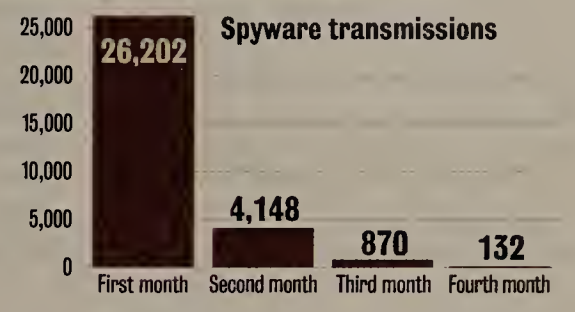
Norman says the TippingPoint IPS has made it possible to deal with a substantial part of the spyware problem but more needs to be done. TippingPoint agrees, promising to add support for more spyware types in the coming year.

John Jones, network supervisor at Utah Transit Authority, which is in charge of the Salt Lake City-area bus and other transportation, also found the TippingPoint spyware filter resulted in a reduction but not an end to spyware on the agency's 600

See Spyware, page 24

Blocking spyware through network filters

The Utah Transit Authority discovered more than 25,000 spyware transmissions from 600 desktop machines the month the agency began filtering. Through a largely manual desktop spyware-eradication process, the transit authority is bringing this nuisance under control.



IT execs share software spending strategies

■ BY ANN BEDNARZ

An ERP consolidation plan will keep IT staff busy for the next few years at metal distributor Ryerson Tull. The $2.3 billion company, which has grown through acquisitions, is replacing five major legacy platforms with a single SAP installation, says Darell Zerbe, CIO and vice president of IT.

Adding to the complexity of the project is Ryerson Tull's most recent deal — the pending acquisition of Integris Metals that will expand the Chicago company to a nearly $5 billion business with 120 locations, Zerbe says.

"My main thrust is to converge a lot of separate types of software down into a pretty standard look across the entire enterprise," he says.

Zerbe joined three other IT executives last week to talk about technology spending plans in a conference call hosted by Morgan Stanley analyst Ross MacMillan.

On the subject of IT budgets, the participants' plans run the gamut.

Glenn DiBiasi expects his IT budget to grow 4% to 5% in 2005, compared with 1.5% growth in 2004. DiBiasi is senior vice president and CIO at Aon, a $10 billion Chicago company that provides risk management and human capital consulting services.

> **"My main thrust is to converge a lot of separate types of software down into a pretty standard look . . . "**
>
> **Darell Zerbe**
> Vice president of IT and CIO, Ryerson Tull

Some of that money will go toward replacing a good portion of Aon's desktops and laptops, DiBiasi says. A CRM project also might get the go-ahead. "We put a placeholder for that, but it depends on business direction," he says.

One area losing funding is the mainframe, DiBiasi adds. "We hope to move off a lot of those systems, so our mainframe spending will go down dramatically," he says.

See Spending, page 24

'NET INSIDER
Scott Bradner

Compartmentalizing the Internet

The FCC earlier this month ruled that VoIP services generally cross state borders and, even in the cases where they do not, it is often impossible to tell. Gee, what a revelation!

Of course this has been clear for quite a while to anyone who actually thought about it for more than a few nanoseconds. But the FCC ruling was required to keep state regulators from ignoring this reality in their quest to "protect the public" and, in a total coincidence I assume, raise state revenue. Even though it's correct in exempting VoIP from state regulation, the FCC's opinion might come back to haunt it.

On Nov. 9, the FCC adopted a Memorandum Opinion and Order on VoIP service provider Vonage's petition for a declaratory ruling requesting that the FCC pre-empt an order from the Minnesota utility commission imposing traditional telephone service regulations on VoIP services (see www.nwfusion.com, DocFinder: 4730). I wrote about the Minnesota order shortly after it happened (DocFinder: 4731) and mused about the usefulness of regulators in light of such orders (DocFinder: 4732). So I will not repeat those points now.

The FCC's new order noted that state regulation, both in the telecom market and in general for commerce, was only valid for services confined within a state. It's clear that VoIP services, like those offered by Vonage, cannot generally be seen as being limited to in-state, and the FCC order detailed a number of reasons that it was not feasible for a service provider to know if a particular call originated and terminated in one state. The reasons included that Vonage users can transport their equipment anywhere and still use it to place or receive calls and that Vonage offers customers the ability to use what appear to be local phone numbers from, let's say New York City, anyplace they want to, such as Minneapolis.

The FCC recognized that the Minnesota order dealt with many important issues that needed to be resolved and said that the FCC would address some of these in its forthcoming overall IP-enabled services rules. One of those issues is Enhanced 911 (E911).

The IETF is investigating aspects of the E911-over-the-Internet problem and might develop recommendations and standards in the next year or two and work in the SIP and Session Initiation Proposal Investigation (SIPPING) working groups.

The FCC might come to rue the day that it made many of the arguments in this order because the same arguments can be very easily made to say that VoIP (and most Internet) regulation should not be a national issue.

Just like calling a help desk for many American companies rings a phone halfway around the world in India there is no way to be sure that the VoIP phone that rings when you call a number in the 212 area code is in the U.S.

Disclaimer: Because it's hard to outsource teaching in a residential university I don't think Harvard has a direct opinion on the trend, but I didn't ask and the above observations are my own.

Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sobco.com.

Spending

continued from page 23

IT budget growth also is on tap for health benefits provider Humana. Spending will likely rise slightly in 2005, says Ray Daud, director of software procurement at the $12 billion health benefits company in Louisville, Ky. Security upgrades and projects related to compliance with the Sarbanes-Oxley Act are among slated projects, he says.

As a health benefits company, Humana operates in a highly regulated environment, so many of the internal controls required by legislation such as the Sarbanes-Oxley Act already are in place, Daud says.

Current initiatives are aimed at spotting possible gaps, such as making sure financial systems can track transactions made on the Web from their origination until they reach Humana's legacy platforms. "Tracking transactions and making sure there are controls in place every step along the way — that's where we're finding most of our investments," Daud says.

Sarbanes-Oxley also is an issue for Ryerson Tull, which finds its budget being eaten up by the federal legislation.

"We basically believe we got through Sarbanes-Oxley Section 404 this year by wheeling in a number of filing cabinets and buying a few tons of manila folders," Zerbe says.

Next year the company will consider investing in software to help with the process, but it's not a sure thing. "We're perfectly OK to live with the sort of brute-force method we used this year if the software is too expensive or we just don't feel like it's worth it."

For the short term, Zerbe's IT budget will remain flat or grow slightly in 2005. Ryerson Tull is funding the big SAP consolidation project, as well as a companion project to migrate to thin clients using Citrix Systems' MetaFrame technology. So far, six locations are up and running, Zerbe says.

But once that effort is complete, the budget trend will reverse. "We're anticipating significant reductions in spending beginning with '06. We're going from fat desktops to thin, we're going from multiple legacy environments to one new environment, and we're going to be reducing staff by anywhere from one-third to 40%," Zerbe says. "We're looking at taking a lot of IT costs out in the longer range."

Meanwhile, IT spending will drop 5% to 7% next year at LSI Logic, says Bruce DeCock, vice president and CIO at the $1.2 billion Milpitas, Calif., semiconductor maker. "We just had a pretty significant reduction in force, and that affected IT. So we're going to actually be spending less," he says.

LSI Logic will focus its IT monies on strategic projects, including adding product life-cycle management software to its SAP suite. The company also plans to upgrade its customer-facing portal, DeCock says.

Fortunately, not every project takes big bucks. For example, LSI Logic plans to invest in wireless and VoIP, but it won't break the bank doing so. "Those are great technologies, but they just don't take a lot of spending to get them in place," DeCock says.

Spending cuts will come from a reduced head count, application consolidation efforts and a move to more services, DeCock says.

A big shift at LSI Logic will be in where the money for IT projects comes from, DeCock says. "Our message to the user community is we want to see more and more user-funded, business-funded projects," he says. The IT department will manage projects but push a lot of the spending to the business units. ■

Spyware

continued from page 23

desktop machines. The TippingPoint appliance is a "wonderful tool against spyware but not a silver bullet," Jones says.

Both Wellstar and Utah Transit Authority are looking to add desktop anti-spyware protection after a review process to locate affordable and comprehensive products with enterprise management capabilities.

Other vendors attack problem

Meanwhile, Configuresoft and LANDesk, which already compete in the area of desktop application management, are stepping into the spyware arena.

Configuresoft last week announced it's offering a free anti-spyware tool that works with its Enterprise Configuration Manager to check desktops for about 1,400 spyware types.

For its part, LANDesk last week announced a product called LANDesk Security Suite to chase down about 10,000 spyware types based on a policy that can be set by IT managers. The product, which also is intended for patching and vulnerability assessment, is expected to ship next month. Pricing has not been determined.

One of the largest anti-virus vendors, McAfee, has geared up for the spyware chase with the announcement last week of Anti-Spyware Enterprise Edition Module, a spyware detection and eradication module that works with McAfee's anti-virus software, VirusScan Enterprise 8.01 and the older 7.1.

McAfee, which prefers to refer to spyware as "potentially unwanted programs," expects to ship the Anti-Spyware module by year-end.

John Bedrick, McAfee marketing manager for systems security, says the Anti-Spyware Enterprise Edition, priced at $15 per seat, will be host-based software that can be managed by McAfee's two management consoles, ePolicy Orchestrator and Protection Pilot.

"You'll be able to get reports on spyware," Bedrick says, adding the total number of spyware types targeted by the product is still being developed. ■

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IPv6 product testing needed, experts say

■ BY CAROLYN DUFFY MARSAN

IPv6 products need more conformance testing. That's the conclusion of network industry heavy hitters AT&T, Cisco, Juniper, Lucent, Microsoft and others, which are developing products that support IPv6, the next generation of the Internet's main communications protocol.

Sixteen vendors recently completed a third round of interoperability tests on Moonv6, the largest native IPv6 backbone. Moonv6 is a joint operation of the University of New Hampshire (UNH) InterOperability Laboratory, the Department of Defense, the North American IPv6 Task Force and the Internet2 university consortium.

The latest round of tests involved approximately 80 servers, switches and routers at 10 military and university sites from New Hampshire to Arizona. Moonv6 was founded last year and has held prior interoperability test events in March 2004 and October 2003.

The latest tests ventured into new areas, including VoIP, wireless LANs and streaming video via multicast. Several firewall features were tested, as well as specific protocols, including IPSec, DNS and Dynamic Host Configuration Protocol. Routing, tunneling and QoS were included.

The Moonv6 consortium will issue a report on the latest tests next month.

"The underlying infrastructure of IPv6 is solid," says Erica Williamsen, Moonv6 technical manager. "The real work needed now is for vendors to fine-tune their implementations and interoperability, and for service providers to adopt and deploy it."

The Moonv6 tests are designed to help boost commercial deployment of IPv6, which is lagging in the U.S. behind Europe and Asia. The only major U.S. organization to commit to IPv6 is the Defense Department, which has a policy that requires all of its network hardware and software to be IPv6-compliant by 2008.

Developed by the IETF, IPv6 promises easier administration, tighter security and an enhanced addressing scheme over IPv4, the Internet's current protocol. IPv6, which uses a 128-bit addressing scheme, supports a virtually limitless number of uniquely identified systems on the 'Net, while IPv4 supports only a few billion systems because it uses a 32-bit addressing scheme.

Moonv6 testers — which included about 30 network engineers from vendors, UNH and the Defense Department — found configuration issues with several IPv6 applications, participants say.

"There were lots of configuration and stability issues with VoIP," says Gerard Goubert, voice and wireless manager at the UNH lab. "From our side, the network was fine but some remote sites had problems."

Goubert says the VoIP configuration problems were expected because the technology is so new.

"It was mostly just configuration of the test equipment so it would fit into the scenario we were trying to test," Goubert says. "It was nothing strange or abnormal."

Getting VoIP to work over IPv6 is important, says Mark Fishburn, vice president for technical strategy at Spirent Communications, which provides test methodology and equipment to Moonv6.

"The No. 1 service that service providers intend to deploy next year is voice-based services, and [IPv6] could be an important element of that," Fishburn says. "IPv6 is real for us because service providers are testing it, and equipment manufacturers are putting it into their products."

Moonv6 testers found some firewalls were not implementing IPv6 stateful functionality requirements correctly and that some IPv6 applications didn't support user authentication.

But the IPv6 multicasting tests went smoothly.

"Once we had it all configured, multicast worked on the first try and we ran it for several days straight," Goubert says. "I was very impressed. We had 13 machines running multicast."

Moonv6 participants also ran the first test of iSCSI, an emerging network back-up and storage protocol, over IPv6. Microsoft engineers involved in the iSCSI test formatted and mounted a remote disc over IPv6 using iSCSI and then copied files to it as if it were a local disc. Four discs were connected at once.

Moonv6 organizers say network vendors need to refine their IPv6 implementations to improve the interoperability of their products with those from other companies. However, they say they have discovered no major technical roadblocks for IPv6 deployment.

"The major hurdles that we've encountered are more configuration-related than protocol-related," Williamsen says. "But users are going to have to learn IPv6. It's not a simple transition."

Williamsen says continued IPv6 conformance testing will make it easier for enterprise network managers to deploy IPv6 applications.

"There's a great need for future testing in firewalls, security, IPSec and newer applications like [Session Initiation Protocol], multicast and streaming video," Williamsen says.

The current round of tests ran from Oct. 30 until Nov. 12. ■

Moonv6 test set

The following protocols were among those tested:

- 802.11 wireless LANs
- Ethernet networks
- IPSec between firewalls
- DHCP
- DNS
- iSCSI

Presence technologies and the Global Grid

EYE ON THE CARRIERS
Johna Till Johnson

I'm a big believer in historical cycles, particularly when it comes to technology. True, nothing ever happens exactly the same way twice, but tech trends have a way of being, in the immortal words of Yogi Berra, "déjà vu all over again."

As a physics grad student in the 1980s, I discovered the Internet as a way to get data back and forth from the accelerator in Fermilab where my experiments ran. I spent the next 10 years trying to convince people that this thing called the Internet would change the way we live and work.

Today, I'm having the same conversation about presence technologies. The arguments against presence today are about the same as those against the Internet: It's just for geeks (or kids). It'll never work. And what do we need it for, anyway?

As before, some of the earliest adopters include the federal government, particularly the Department of Defense. As noted in previous columns, contrary to popular belief the Defense Department didn't invent the Internet, but DARPA and its researchers recognized the defense applicability of distributed networks.

Ditto for presence. During Gulf War II, when most corporations had barely heard of instant messaging, soldiers and their commanders were using it regularly to get instantaneous insight into battlefield events. Now the Defense Department has announced plans for a Global Information Grid, a satellite-based system designed to provide a "God's-eye view" of the battlefield.

Will it work? Internet pioneer Vint Cerf has expressed skepticism. He and others remind us that previous highfalutin satellite schemes have imploded: Remember Iridium, the much-hyped Motorola satellite service that went belly up in 2000?

But let's assume the government is now savvy enough to couple presence to the satellite grid. Envision soldiers in battle — or spies undercover — with minicams in their headgear, constantly uploading what they're seeing and doing into a network of distributed presence directories backed by data-crunching servers. Imagine a general receiving first-person input from a fighter on the front lines. Picture a soldier requesting and receiving real-time data about targets.

Now imagine what that same technology could do for retail, distribution, hospitality or healthcare organizations — or any company that blends knowledge work with logistics. Like the Internet, presence technologies have the potential to change the way we live and work.

Oh, and Iridium? It's doing fine. After selling its assets to a venture firm in late 2000, the reconstituted company is on the path to profitability with more than 100,000 subscribers, thanks to contracts with the government and various maritime and aviation firms. And one of its top-selling services is short message service.

Johnson is president and chief research officer at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.

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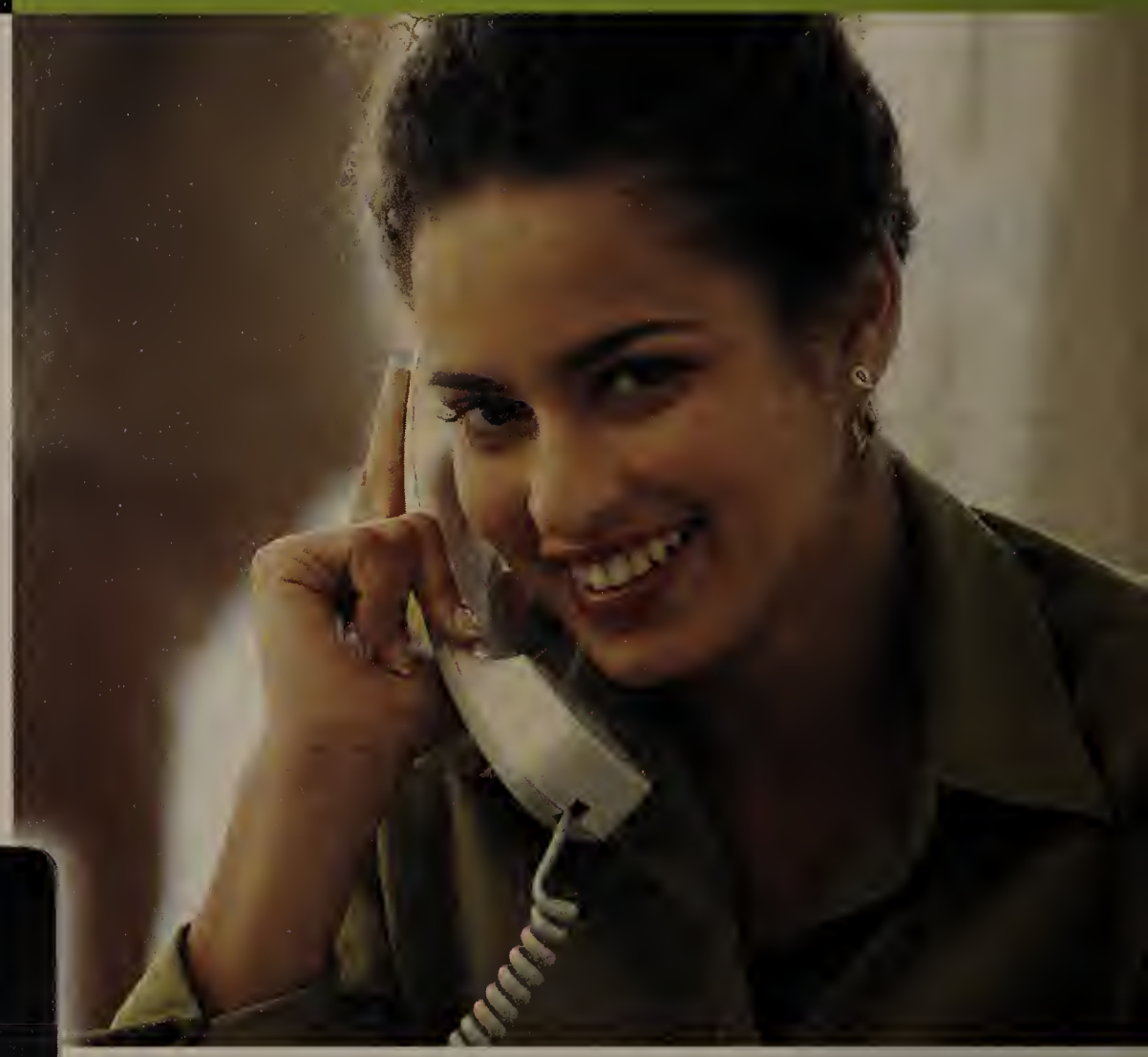

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■ PRODUCTS, SERVICES AND STRATEGIES FOR TYING TELEWORKERS TO THE ENTERPRISE

FCC ruling stirs up VoIP competition

■ BY STEPHEN LAWSON

The FCC's Nov. 9 decision to preempt state regulation of VoIP operators should result in more choices and lower prices to telecom customers, with particular benefit to telecommuters, according to industry analysts, service providers and equipment vendors.

The decision already has opened the pocketbooks of two VoIP companies looking to expand their offerings. Pulver.com, founded by Internet telephony pioneer Jeff Pulver, plans to launch a prepaid calling service called LibreTel by early December, and Vonage Holdings plans to expand its leased-fiber network to offer higher-quality calls and local phone numbers in more locations.

Vonage was the immediate winner in the ruling, in which the FCC granted the company's petition that its DigitalVoice service should be exempt from traditional telecommunications carrier regulation by the Minnesota Public Utilities Commission. Among other things, the regulations would have required Vonage to get a license to operate in the state. Services such as DigitalVoice, which lets subscribers make and receive calls over a broadband connection from anywhere in the world, should not be regulated by both state and federal governments because it's impossible to distinguish between local and long-distance calls, the FCC said.

The decision, which also cited the FCC's deregulatory policies and the federal government's policies to promote Internet development, had been expected to favor Vonage. The fight over how to regulate VoIP is far from over, but the latest ruling should clear up some uncertainty and benefit the VoIP industry, analysts and industry executives say.

"Effectively, everyone's been green-lighted now to go and launch their products," says Pulver, president and CEO of Pulver.com. Even though the industry still is waiting for a broader FCC decision on whether VoIP should be regulated as a telecom or a data service, he adds, "There's a window of opportunity for people to come out and offer services and not worry about what's at the state level." Pulver.com's own free VoIP service, Free World Dialup, got a favorable ruling earlier this year when the FCC exempted it from most regulation. Unlike most VoIP services, Free World Dialup is free and allows calls only between subscribers.

Pulver says the new prepaid LibreTel service will offer a "virtual" phone number and unlimited VoIP calls for a flat monthly fee. Had LibreTel required state approvals, Pulver.com would have had to post bonds of millions of dollars in some cases.

"I saw no value in pushing the envelope until there was certainty," Pulver says. "The administrative cost of the service would far outweigh any profit margins I'd have."

Vonage has held off investing in new infrastructure until the decision was made, says CEO Jeffrey Citron. The DigitalVoice service can reach any phone by handing off calls to the public telephone network, but in areas where Vonage has its own network it can provide local numbers. These let Vonage subscribers establish a virtual local presence so relatives, friends and business associates can call them at local rates. Now Vonage plans to expand its network to Iowa, Maine, North Dakota and other states, according to Citron.

David James of Netgear, which supplies VoIP equipment to consumers and small businesses, expects to see big incumbent carriers and cable operators dive in nationally and take advantage of economies of scale. Having to accommodate regulators in each state would have slowed them down and prevented consistent nationwide pricing and marketing, says James, Netgear's director of broadband services products.

Verizon Communications, which offers its own VoIP service, welcomed the decision. Having to go through state regulators would impose costs and delays on service providers, so removing that requirement should help drive down prices, says spokesman Eric Rabe. However, the FCC's policies aren't yet fully clear, he says.

Competition and lower prices are especially good news for telecommuters, who can use VoIP to easily set up a work phone at home without having to buy a conventional second line from the phone company, says In-Stat/MDR analyst Daryl Schoolar. VoIP services also can provide enterprise phone extensions wherever an employee travels with a VoIP phone. Those benefits also carry over to small businesses, which can get a broadband connection and set up several lines quickly and easily.

These new abilities are part of a gradual trend toward new presence technologies for telecommuters, eventually including videoconferencing through VoIP, says Malachy Moynihan, vice president of engineering and product marketing at Cisco/Linksys.

Even so, analysts and executives cautioned against jumping to conclusions from the decision. The FCC hasn't issued a detailed ruling on the Minnesota case yet, although IDC analyst Will Stofega expects one to come by year-end. Big questions loom on emergency 911 service and government subsidies for universal phone service. In its statement on the decision, the FCC wrote that 911, universal service and other issues would be addressed in its broader IP-Enabled Services Proceeding, which will begin in February 2005.

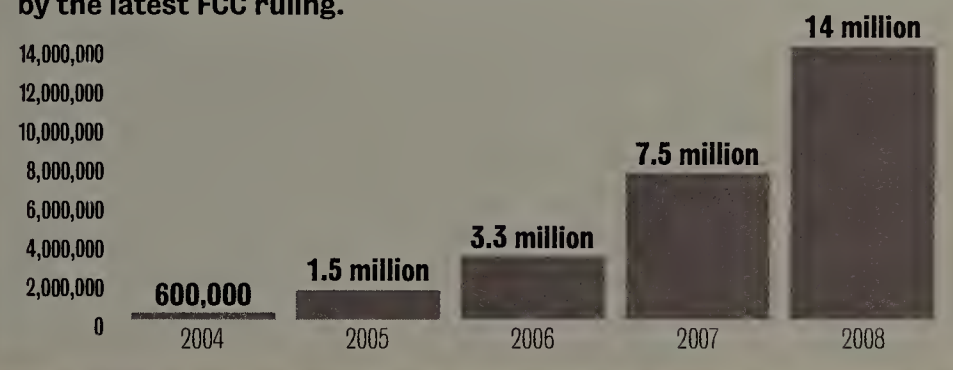
Many issues, even involving state taxes and franchise fees, are still up in the air, In-Stat's Schoolar says.

"It's a good first step because at least you know who [service providers] have to deal with," he says. "By no means does it mean that they're off scot-free and aren't going to be paying taxes in the future."

Lawson is a correspondent with the IDG News Service.

Consumer VoIP vaults

By the end of 2008, IDC expects 14 million consumers will subscribe to VoIP services. The analyst firm says its projections were not affected by the latest FCC ruling.

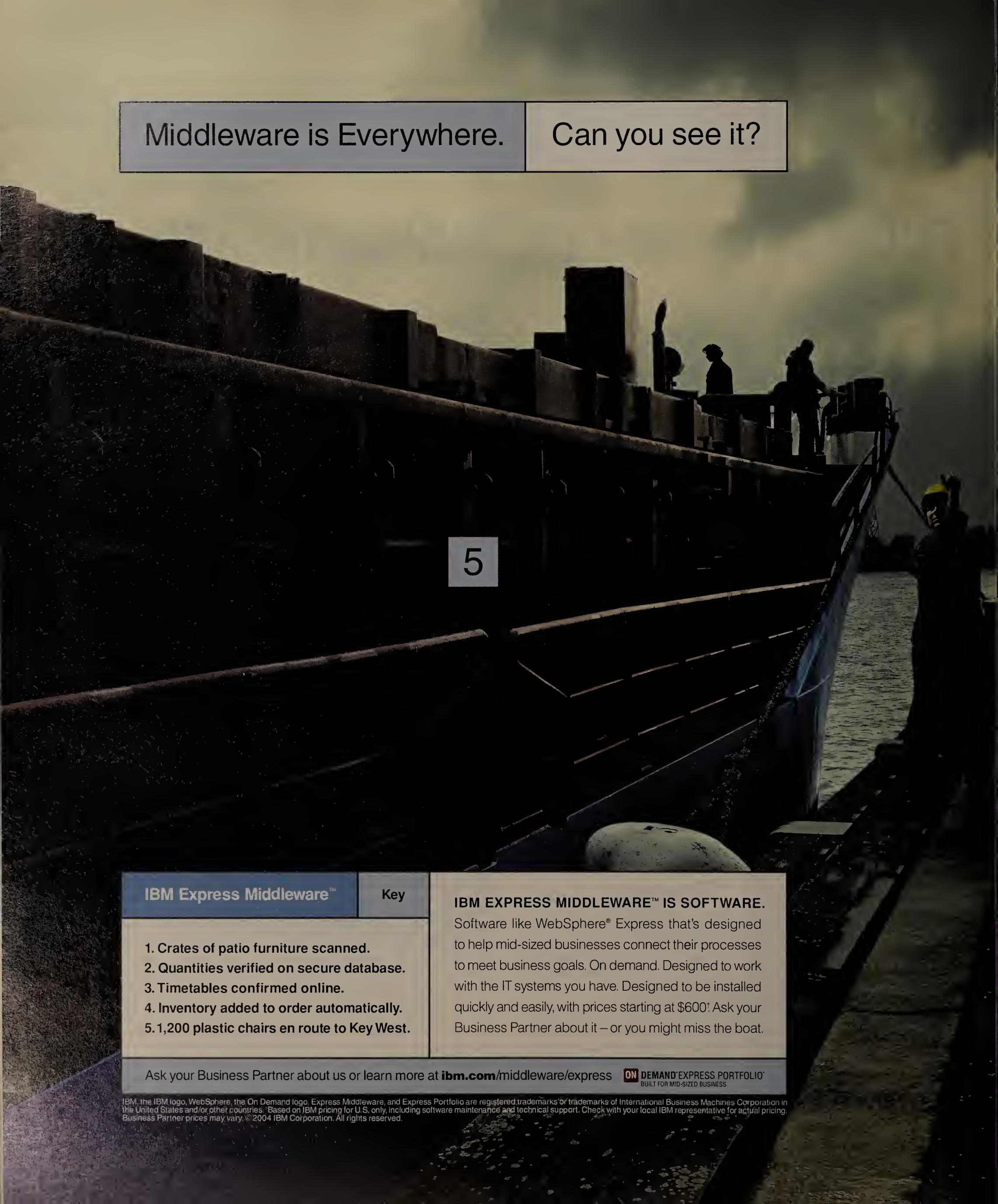


Short Takes

■ **KeyComputing** has announced **Xkey Security Edition,** a secure USB flash drive that lets users safely access data and Web applications from untrusted computers. Data on the Xkey is encrypted with 128-bit Advanced Encryption Standard and protected by a complex password. The device stores and uses digital certificates to authenticate to Web applications and VPN clients, and for digital signatures and encrypting e-mail. Xkey neutralizes key-loggers and text grabbers, and ensures traces of the browser session are deleted. When the Xkey is removed, all browser sessions are terminated. Available next month, the 256M-byte Xkey costs $175; the 2G-byte costs $450.

■ **Qwest** has announced **Qwest Remote Access,** a service that lets mobile and remote workers connect to corporate VPNs using Qwest's global dial-up, broadband and Wi-Fi services. A management portal and client software lets network executives enforce access rights and ensure remote workers have the latest anti-virus and firewall security policies.

■ **Linksys** has announced its 802.11g **CompactFlash Card** for Pocket PCs and PDAs. The CF Card installs using a CompactFlash Type II slot, supports 128-bit Wired Equivalent Privacy, and works with Windows Mobile 2002 or higher operating systems. Built-in power management helps save battery power. And Linksys says in ad hoc mode, the device lets users download data from a wireless PC without a wired cradle or network connection, and share data with other wireless PDAs.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Technology Update

■ AN INSIDE LOOK AT TECHNOLOGIES AND STANDARDS

802.11n throttles up WLAN throughput

■ BY JACK WINTERS

The drive for higher throughput in wireless LANs has pushed the IEEE to develop 802.11n, a new version of the 802.11 standard that promises throughput in excess of 100M bit/sec in 20-MHz to 40-MHz of bandwidth. This standard would permit very-high-speed interconnection of wireless devices over distances of 300 feet or more.

Current IEEE 802.11a/g WLANs operate with raw data rates up to 54M bit/sec, but the actual throughputs are generally no more than 20M bit/sec. Although fine for many applications, interconnection devices with higher data rates, particularly HDTV and streaming video, can require throughputs of 100M bit/sec and higher. Achieving this throughput within the unlicensed channel of 20 MHz requires improvements in the physical layer (that is, the raw data rate) and the efficiency of the media access control (MAC) layer, such that the throughput is closer to the raw data rate.

One technique to increase MAC efficiency involves aggregating packets so the data is sent in longer units, decreasing the overhead of the packet preambles.

The most practical method to increase the raw data rate is a technique called multiple input/multiple output (MIMO). MIMO uses multiple transmit and receive antennas to create multiple spatial channels between a transmitter and receiver. In the multi-path environment in which WLANs operate, by using, for example, four transmit and four receive antennas, data rate can be quadrupled within the same bandwidth, using the same transmit power.

At an IEEE standard meeting last September, four complete and 28 partial proposals for 802.11n were presented. The proposals will be evaluated and converged in a final proposal during subsequent meetings that will occur every two months. The two complete proposals with most of the support are the WWise and TGn Sync plans. These two proposals include a common two transmit, two receive antenna mode in 20-MHz channels.

These two proposals differ in many aspects, though, including their preambles and degree of packet aggregation. For example, TGn Sync uses longer data unit lengths (about eight to 32 times longer) with longer preambles (up to two times longer for more robustness) than WWise.

In addition, the other complete and partial proposals contain a variety of techniques, such as transmit beam forming, each with advantages and disadvantages. The 802.11n proposals are similar enough that reaching a compromise proposal appears feasible. A number of optional modes might need to be included, though.

Some proposed modes include four transmit/receive antennas in 2-MHz to 20-MHz channels for data rates in excess of 500M bit/sec, showing the power of MIMO to provide extremely high data rates.

Even though the standard is not expected to be completed until 2007, so-called pre-n equipment is being marketed, and more companies are expected to introduce pre-n gear before the standard is approved. Although the final standard will most likely differ from these products, they use the term pre-n because they use MIMO (which is included in the two main proposals and will likely be in the final standard) and achieve data rates much higher than 802.11a/g.

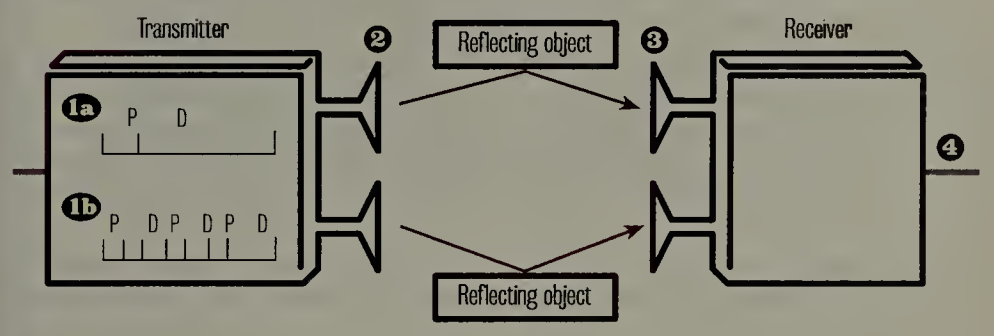
This certainty also permits an 802.11n analog radio frequency front end to be designed well before the standard is approved, with the much-shorter-development-cycle digital circuitry/software finalized with the standard. 802.11n could cost more than twice that of 802.11a/g, because the multiple RF chains required with MIMO have not seen the dramatic cost reductions of digital circuitry.

Winters is chief scientist at Motia. An IEEE Fellow and a member of the IEEE 802.11n Working Group, he can be reached at jwinters@motia.com.

802.11n

■ HOW IT WORKS

The forthcoming IEEE 802.11n standard promises throughput of at least 100M bit/sec. The two leading proposals, WWise and TGn Sync, both use two transmit and receive antennas but differ in the size of their preambles and degree of packet aggregation.



1a Using TGn Sync, a transmitter aggregates data packets into longer units with a preamble added (P-preamble, D-data) and split into multiple streams.

1b Alternatively, using WWise the transmitter aggregates data packets into longer units with added preambles (shorter than TGn Sync) and split into multiple streams.

2 The transmitter transmits the data via different antennas using the same bandwidth at the same time.

3 The signals travel over many different paths, and are reflected off different objects, eventually arriving at the receive antennas.

4 The receiver receives and jointly processes the signals to separate the transmitted streams, which are then recombined to generate the output data.

Correction

■ The story "App routers integrate data in a snap" (Nov. 15, page 41) should have listed the author's e-mail address as fred.meyer@castironsys.com.

Ask Dr. Internet

By Steve Blass

Where can I find an alternative to Apache Format Objects Processor to produce PDF files from XML documents using Java ?

IText (www.lowagie.com/iText/), an open source library that can produce PDF documents dynamically from Java programs, is available in ready-to-use pre-compiled binary format and source code. From the iText Web site, download the two jar files that make up iText, found in the Download section of the page. Place the jar files in a directory that is part of your Java Classpath. To use the library, download the Hello World example named Chap0101.java located at the top of the iText tutorial page. The example is a stand-alone Java application that will create a PDF file containing the words "Hello World" when executed. To build and run the example in Eclipse, create a Java Project containing the two jar files and the example file, add the jar files to the Java Build Path using the Project Properties menu, and run the application to create Chap0101.pdf. The iText tutorial pages provide several examples of how to apply the steps demonstrated in the Hello World tutorial.

Blass is a network architect at Change@Work in Houston. He can be reached at dr.internet@changeatwork.com.

GEARHEAD INSIDE THE NETWORK MACHINE

Mark Gibbs

Halt! Who goes wirelessly?

Problems with users fall into two categories: Those caused because users are clueless and those caused because users have half a clue. The latter group is at least as dangerous as the former and often more so.

What you'd really like to do is put locks on all the PC cases, remove all CD and floppy drives, super-glue any and every cable into its socket, weld covers over every unused port and have a standing rule that any user who does anything to the equipment gets brought before the support desk and given 20 lashes. Alas, such power will exist only in your dreams.

Anyway, the current half-clued user transgression we are wrestling with is unauthorized wireless extensions to corporate networks. The problem is that 802.11 access points have plummeted in price, making it easy for any user with even the most microscopic discretionary budget to buy one.

So how do you keep tabs on authorized wireless networks and detect unauthorized access points, ad hoc networks and wireless clients? Some of the newfangled wireless LAN switches have this capability built in, but the best stand-alone tool we've found so far is from Highwall Technologies.

Highwall's solution consists of a box called the Sentinel with optional Scout Antennas. The Sentinel can detect 802.11a, b and g wireless traffic and runs an embedded version of Linux. It has two RJ45 10Base-T interfaces that support Power over Ethernet and a coaxial connection (which supports power over coaxial). The coaxial connection links to the Scout Antennas, which are used to extend the coverage of the Highwall system.

The Web-based Highwall Management Server provides the management console interface. This requires Microsoft SQL Server under Microsoft Server 2000 or higher with Internet Information Server and ASP.Net.

Configuring the Sentinel hardware requires you to browse to the default address of 192.168.0.33:10000 and change the address to be static or DHCP-allocated. We wish vendors would default to using DHCP — it would make life so much simpler.

Installing the server-based management console software is fairly easy, although you must ensure that SQL Server is configured for mixed-mode authentication (Windows and SQL Server authentication). Otherwise, the Highwall installation process will exit, requiring you to start the installation again.

Once the management console is installed, you must edit the configuration file with Windows Notepad or similar to specify the addresses of the Sentinels, and other operational parameters. When you have finished editing the configuration file you can access the management console through your Web browser.

We could see every operating access point, ad hoc network and wireless client in our vicinity. We could see all the published Service Set Identifiers (the wireless network identifiers), equipment vendors, wireless channels, media access control addresses and IP addresses assigned to non-Wired-Equivalent-Privacy-protected networks. And we could label all the access points and clients so we could filter the lists of equipment as being rogue, domestic or foreign.

The management console displays alerts for each newly encountered wireless device and network, and lets you examine the data and classify it for future reference.

Although we didn't try the Scout Antennas, they are supposed to be able to locate the physical position of wireless devices to within 10 feet. They are said to allow coverage of buildings of more or less any size with multiple floors. The Highwall system also integrates with UniCenter eTrust and Wireless Site Management products from Computer Associates — the latter providing the most accurate determination of physical location.

Highwall told us about an interesting customer success story, if true: A Fortune 1000 medical company is said to be using the Highwall system to monitor 10,000 wireless devices spread over 200 locations. Given regulatory compliance requirements and privacy concerns, keeping track of authorized infrastructure and identifying and locating rogue systems is critical. Highwall says this particular customer sees about 1,000 alerts every day.

Highwall's solution is the most comprehensive and powerful wireless network-monitoring product we have seen. Prices start at $14,000, which includes one Sentinel, two Scout Antennas (supporting 802.11a and g) and the management console software. A Scout Antenna that supports 802.11b also is available.

Broadcast your thoughts over the wires to gearhead@gibbs.com.

Cool Tools

Quick takes on high-tech toys

By Keith Shaw

Top 10 Gift Guide insights

On page 36 this week we present our fifth annual "Cool Yule Tools" holiday gift guide, showcasing the coolest high-tech products of the year.

In addition to the 17 products listed in those pages, we've got more than 130 other fine gift-giving ideas online (www.nwfusion.com, DocFinder: 4729). Over the past few months the Cool Yule Tool elves have opened, installed, tested, re-tested, played with and re-packed several gadgets, devices and other entertaining products.

We're exhausted, but we have come away with some lessons learned, and in true Letterman style we present our "Top 10 Insights from This Year's Gift Guide." We're working on little sleep here, so no letters please.

10. A switch is not a gift. Despite the pitch to companies saying that it was a "gift guide," we still got pitched our share of routers, switches and other networking equipment. While we may look at some of these in the normal pages of Cool Tools and/or *Network World*, they don't really belong in a gift guide.

9. We get odd pitches. On the other hand some companies failed to realize that we do write about technology. We received a pitch about a machine that paints JPEG images onto a person's fingernails (ImagiNail). It sounds like fun, but in the end we decided to pass (our idea of putting a Bill Gates photo on our fingernails didn't pan out).

Using the Ultimate Ears personal monitor requires a trip to an ear specialist.

8. We love geek stuff. Sure, there was excitement when the widescreen TVs started showing up in the office, but we were more excited about all-in-one devices such as the MicroSolutions RoadStor and the Addonics MultiFunction Recorder, which take several cool things (such as a CD player, DVD player and memory card reader) and present them in one package. They're not much to look at, but act like a Swiss Army Knife in terms of productivity.

7. The PC is not the center of the universe. From digital cameras and printers that don't need a PC to act as a middle man, to network-attached storage devices that don't need an always-on PC, it's clear that many manufacturers are trying to avoid relying on a PC for their products to function. Even laptops that can play DVDs or CDs without booting up the PC operating system are joining the fun of trying to work without Microsoft's help.

6. Robots are cool, and yet creepy. You can do a lot with the $100 Robosapien, including annoying co-workers by getting the robot to dance and make noise.

5. Storage size and dropping prices continue to amaze me. Yes, that is 2.2G bytes of storage in my pocket, and I am happy to see you.

4. Printer companies are evil. How else can you explain not including a USB cable for a USB printer? We understand not including a cable when a printer has different interface options (and you don't know what the end user will end up connecting with), but not including a USB cable when the USB port is the ONLY INTERFACE is just wrong.

It doesn't look like much, but the MicroSolutions Road Stor is a productivity giant.

3. Putting goo in your ear is worth it. In order to try the Ultimate Ears personal monitors, we had to travel to an ear specialist who had to take an impression of my ears in order to create the device. While the process was odd, getting something that enhances the digital audio player trumps it.

2. Don't be scared by little companies. Apple, Sony, IBM and Samsung might get all the headlines, but quality products are being put out by smaller companies such as Archos, Kanguru, SimpleTech and BenQ.

1. My 2004 Christmas list: Sweaters, socks and shirts. After testing for three months, I don't want to get anything this year with an on/off switch. We'll try to present more gift ideas over the next few weeks as we continue our quest for the coolest products.

Shaw can be reached at kshaw@nww.com.

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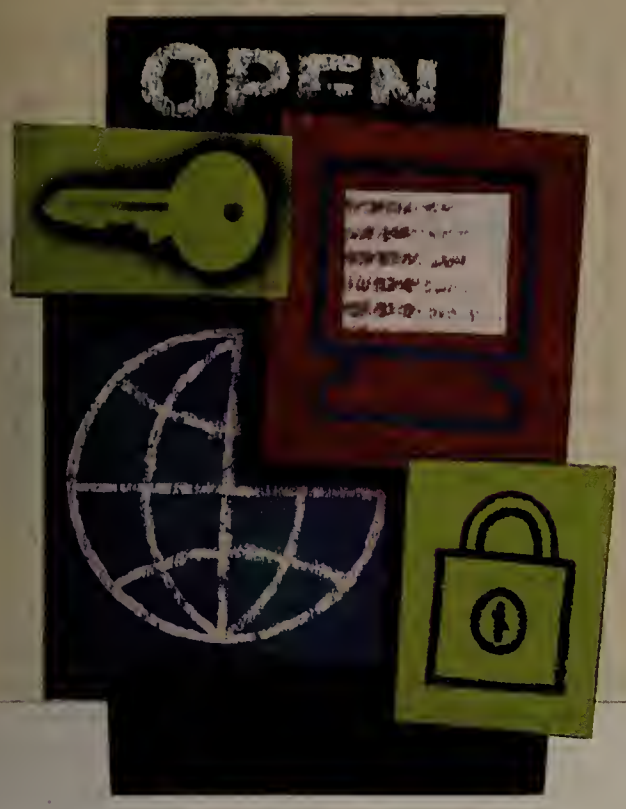

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ON TECHNOLOGY

John Dix

Sizing up the great patch debate

The three distinct vendor groups we invited to participate in our online debate "How best to patch?" struggled to distinguish themselves in our forum last week (see www.nwfusion.com, DocFinder: 4740).

All but one argued that patching is part of something bigger. As could be expected, Altiris and Configuresoft tried to convince us that patching is part of the broader effort of tending to systems. "Patch management is simply the tip of the iceberg when it comes to proper configuration management," Configuresoft said.

And with their security roots, Symantec and Citadel told us we patch systems because we are trying to alleviate security concerns, so approaching the problem from that vantage point is wisest. In Citadel's words: "Patch management is a reactive response to external risks and is inadequate because it only addresses software defects which represent 20% to 30% of the critical system and network vulnerabilities in IT environments.... Enterprise vulnerability management is a more proactive and holistic approach."

Even BigFix, which we had put in the pure-play patch bucket, argued that patch management has to be part of a grander scheme. It tries to keep a foot in both the configuration and security camps by saying patching is part of configuration *and* security management.

Only Shavlik Technologies argued for the pure-play approach, saying a singular focus is necessary because the problem is so difficult. "Patch management is an arduous task and requires detailed patch analysis and testing to ensure networks are protected from vulnerabilities," it said. In an effort to bolster its argument, Shavlik says other vendors — including Microsoft, Symantec and NetIQ — use its technology in their patch solutions.

But if you don't need other pieces to fill in the patch puzzle, why would you buy a patching tool from these other vendors instead of directly from Shavlik?

All this talk of management, of course, raises the question of how the big enterprise management vendors fit in.

When we opened the debate to the public on Wednesday (up to that point it was a private debate among the vendors, our staff and guest expert Felicia Nicastro, from International Network Services), management heavyweight Computer Associates waded in. CA views patching as part of vulnerability management and offers an appliance and a service to cover the bases.

While there was no clear winner in the debate, it's hard to walk away without viewing patching as simply part of something else. Whether it is best built into configuration or security management probably depends on the nature of your business.

— John Dix
Editor in chief
jdix@nww.com

Security through obscurity

Regarding Mark Gibbs' BackSpin column "Interestingly disturbing" (www.nwfusion.com, DocFinder: 4724): I have been in the computer business for 35 years and one of the first things I learned was that security based on ignorance never lasts. I don't see that this axiom has changed much over the years. If there is a problem, fix it and fix it fast. Maybe the problem is the systems management that failed to apply the security patches as soon as possible rather than when it was convenient.

Richard Smart
Vice president, consulting services
TMC Systems International
Norbeck, Md.

DSL dilemma

Regarding Kevin Tolly's column "DSL hell redux" (DocFinder: 4725): My DSL experience involved a major voice and DSL service provider in Southern Maine. I live out in the sticks, so I was fairly sure I would not have access to DSL. Lo and behold, the service provider's Web site informed me DSL was in fact available for my phone number and address. The online ordering process was quick and easy, and follow-up e-mails showed up almost immediately to confirm my order, the expected activation date, as well as shipping status for the equipment and install kit. It sounded too easy and too good to be true — and it was.

On the Saturday following the activation date, I unboxed the gear and instructions and set to work to get my DSL line up and going. Three hours into the process, I called customer support for some assistance. After a lengthy time on hold, I was told that the problem concerned a run of fiber-optic cable that was somewhere along the path to my house, but not to worry — they would dispatch a tech to replace the fiber run with twisted-pair copper. That made me highly suspicious. Replace the fiber with copper? Sounded like backward evolution.

Well, after two revised (and missed) activation dates, I called to see what the story was, only to be informed that my order had been canceled the previous week. No one had called or e-mailed to notify me of this. And now — five or six weeks into the process, with money already charged to my credit card for equipment and many hours of my own time invested in attempting setup, troubleshooting and waiting on hold for customer service — I was out of luck. And not happy.

Of course, the equipment was returned and my payment for it was credited back. But the service provider would offer nothing to compensate for the time spent and frustration of the process — although it was clearly because of their error in telling me I was eligible for DSL service to begin with. The explanation was that their DSL unit and the voice side were really not the same company, so they could not credit my phone bill.

As luck would have it, a cable company van showed up in my driveway several weeks later to install a run of cable to my house. Seems they had budgeted to reach every household in the area in 2004. Great news for me, as my house is about 1,000 feet back from the road on a private drive — certainly not part of the standard installation normally provided for free by the cable company. I had always ruled out cable based on cost to have it installed (once estimated by a previous provider at $3 per foot to reach my house).

So today I am happily cruising the 'Net and sharing large files at high speed via cable. Hello cable, goodbye DSL hell.

John Sheedy
Berwick, Maine

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

More online! **www.nwfusion.com** Find out what readers are saying about these and other topics. **DocFinder: 4723**

TOTALLY UNPLUGGED

Ira Brodsky

Wireless innovation or intimidation?

The ingenuity of wireless LAN vendors has paid off. Once relegated to niche industrial applications, WLANs have gained a foothold in corporate offices and taken the consumer market by storm. With huge markets for Wi-Fi in voice and home entertainment applications looming, the biggest growth still could lie ahead.

Apparently, that makes some vendors nervous. In a recent press release, the Wi-Fi Alliance issued a warning: Products that jump the gun on the future IEEE 802.11n standard will not be Wi-Fi-certified. Furthermore, any product incorporating so-called "pre-n" enhancements could be decertified "if that product is proven to adversely impact the interoperability of other Wi-Fi-certified products."

At issue is a momentous advance, central to every 802.11n proposal, known as Multiple Input/Multiple Output Orthogonal Frequency Division Multiplexing (MIMO-OFDM). Using multiple transmitters, receivers and antennas, MIMO-OFDM exploits the "multipath" signals that normally plague wireless systems. When used at both ends of a link, MIMO-OFDM delivers profound throughput and range improvements. Added to today's Wi-Fi networks, products incorporating MIMO-OFDM can fall back to a smart antenna mode that enhances performance of existing 802.11a/b/g products.

The Wi-Fi Alliance insinuates that some vendors are misrepresenting products as conforming to a standard that probably won't be finalized until 2006. That's a red herring. The real problem is that products conforming to the 802.11n standard won't appear until 2007, but products offering the advantages of 802.11n technology are available now.

The Wi-Fi Alliance also warns against pre-n enhancements that interfere with existing certified products. That's another red herring. The market is brimming with products that offer proprietary but well-behaved enhancements to the 802.11a/b/g standards. Far from disrupting current Wi-Fi products, MIMO-OFDM products offered by vendors such as Belkin and SOHOware are Wi-Fi-certified and boost performance when used with 802.11a/b/g products.

A few years ago, the WLAN industry had a similar experience with the IEEE 802.11g standard. Vendors that introduced pre-G products wrested market share away from the market leaders. Customers with an urgent need for enhancements destined for the 802.11g standard were willing to buy pre-standard products to take immediate advantage of those enhancements.

Some leading vendors are worried the pre-n products spilling onto the market could reshuffle the market share deck. Their fears are well founded. But it would be unfair to make users wait three years just so slower-footed vendors can catch up.

Until now, the Wi-Fi Alliance has served both the industry and end users well by promoting and protecting interoperability. But the alliance must be careful not to confuse special interests with common interests. It's just as important to protect vendors' right to innovate. Standards help grow the market to the next level, but innovations like MIMO-OFDM get the ball rolling.

Brodsky is president of Datacomm Research in St. Louis. He can be reached at ibrodsky@datacommresearch.com.

Some leading vendors are worried the pre-n products spilling onto the market could reshuffle the market share deck. Their fears are well founded.

ON SECURITY

Winn Schwartau

We are not divided

Despite the recent political results, we are not a divided nation. This is not a political commentary, but one of common interest to all of us in this country, not to mention the rest of the world. We certainly have more in common than we have differences.

In all of my years in information warfare, hanging out with feds, the military and all sorts of people in between, we have hardly ever discussed politics. It didn't matter; we had a job to do. I still do not know the political leanings of my professional friends and colleagues — and I prefer to keep that sort of non-productive divisiveness out of my security mindset. Because, ultimately, we are united, not divided.

We need each other to survive. We need to think and act like partners and competitors at the same time by achieving a healthy symbiotic balance between the two roles. Impossible you say? Au contraire, mon ami!

The most striking example of competitive partnerships might be seen in the nation's Information Sharing and Analysis Centers (ISAC), created by former President Clinton's Presidential Decision Directive 63. As successfully demonstrated in the financial services ISAC, competing banks and insurance companies realize that cooperation in the areas of security and infrastructure protection is necessary for the common good. No one person, company or country lives in electronic isolation. A major security event at one bank is a sure prelude to other banks experiencing similar pain.

Changes in security are occurring inside many top corporations. Traditional stovepiping of security functions is only a hindrance. Cybersecurity requires physical security, both of which require trusted personnel to make it all work. Security departments must integrate their operations more than they ever have. The business-continuity folks need the cybergeeks and the man who fills the back-up generators with oil. The last holdout here, though, is human resources, which prefers absolute hegemony over cooperation. The only way this will change is for senior management to tell HR that they have to play nice with others — even if that means being occasionally politically incorrect in the pursuit of greater corporate security and integrity.

So despite the endless portrayals of embittered foes in politics and business, we are not divided. Despite our healthy disagreements on details, we are in agreement about the goals of computer security.

We agree that protecting the critical infrastructures is in the best interest of the U.S. and the stability of the world because we are all so interconnected. We all need to be reasonably healthy for any one company or country to succeed. We agree that personal privacy is more important than our government treats it and would like to strengthen it when and where we can. We agree that the bad guys are really, really bad and they operate asymmetrically, with little regard for consequence.

These thoughts form a platform that suggests methods for expanding and exploiting the opportunities competitive partnerships offer:

- Create tax incentives for organizations that can demonstrate a strong investment in security tools and personnel.
- Make security issues an educational component from the earliest school years. We tend to teach our children how to use computers, but not why or why not to do certain things.
- Educate America and the world. There is plenty of precedence for this. Think "Unsafe at Any Speed." "Only You Can Prevent Forest Fires." "Just Say No." "Smoking Kills." All successful public education programs. Protecting our nation's economic and technological well-being doesn't even have an advertising tag line. Shame on us.

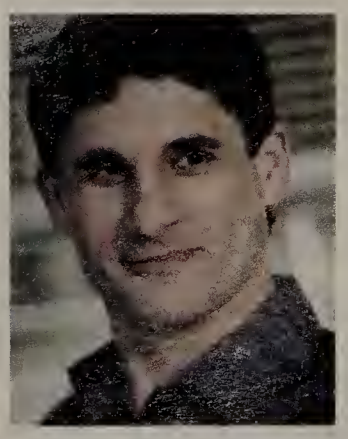
So let us in the security community remain undivided and focus on the benefits we share and our common (and competitive) interests. In the grand scheme, political infighting is an aside, better left to the politicians. Computer security and protecting critical infrastructures are better left to us.

Schwartau is president of Interpact, a security awareness consulting firm, and author of several books, including the recent Pearl Harbor Dot Com. *He can be reached at winn@thesecurityawarenesscompany.com.*

Computer security and protecting critical infrastructure is better left to us.

Your Newest Enemy: Unprotected Endpoints

iPass CTO Roy Albert talks about achieving gap-free protection for your enterprise network.



A dramatic shift is on the way for IT organizations, according to Roy Albert, chief technology officer at iPass. While much has been made of the need to protect the edge of the network, Albert believes IT organizations should place more focus on the rapid proliferation of unprotected devices hooking onto the network and the inherent security risks of having mission-critical data on those devices. Albert says IT managers should immediately address this issue—what he sees as an unacceptable gap in enterprise security—before corporations possibly suffer the competitive, financial, and legal consequences of having that data stolen. Here he outlines the threat and how IT managers can protect themselves.

Why do you see remote and mobile devices as a severe network threat?

There was a point last year when security cropped up in all our customer conversations. IT managers were asking: How do I stop viruses from coming in and affecting my entire network? We discovered that while most vendors have made a big deal about protecting the edge of the enterprise network, there's another strategic inflection point that is coming—the devices themselves. IT managers don't yet pursue the security of those devices as if their jobs depended on it. Yet those devices [especially those carried by senior executives] have mission-critical data on them which needs to be protected.

In terms of sensitive documents and financials?

People have e-mails and financial documents and confidential customer information that lives on laptops and handhelds—and many of these people travel extensively. If those devices are compromised and critical information is stolen, the company may have just allowed information to leak to a competitor, or may have violated customer data privacy. Mobile devices are becoming easier to lose as they become smaller and more portable. IT groups have to take responsible precautions to protect those mobile devices.

Enterprises as a whole are becoming mobilized—resources that used to be centralized are moving out to mobile devices; so you have to think about your security in terms of the extended enterprise. Devices need to be protected in their own right. Additionally, users don't always connect to the enterprise every time they log on to the Internet. Therefore, in order to achieve gap-free protection, IT managers need to focus on the defense of mobile and remote devices anytime they are connected to the Internet.

What are the biggest concerns in supporting and protecting remote and mobile devices?

The first is protecting the information on users' machines, because that is part of the intellectual property of the corporation. The second big concern is ease of use. IT departments are besieged by trouble calls when the users are blocked [from the network]. We have seen recent instances where IT managers have sacrificed security for ease of use and have gotten into trouble later. So the real challenge is to implement security so that it doesn't interfere with the end-user experience.

ARE YOUR IT ASSETS SECURE?

Follow these steps for gap-free protection.

User Identity—Make sure user credentials for Internet and VPN access are protected as they transit local access providers and the Internet.

Endpoint Integrity—Perform assessment and remediation on all mobile and handheld devices connecting to the Internet from outside the firewall.

Enterprise Network—Put in place a mechanism that lets you deny untrusted users and endpoints access to network assets.

Device Identity—Only let trusted devices have full access to your enterprise.

Session Data—Limit the ability of users to communicate from insecure sites without a VPN in place to avoid data or identity theft.

What about regulatory issues? What role do they play in securing the devices in the extended enterprise?

I think we're going to see more legislation—already there's HIPAA in the U.S., among others—and we're going to see more inadvertent disclosures. Perfect security is cost-prohibitive, but the IT department is obligated to do a reasonable job of protecting devices. The unfortunate truth is that many IT departments don't have a clear idea of what their risk exposure is from remote and mobile devices.

What are some of the ways IT managers can address device security?

Deployment of personal firewalls, anti-virus software and VPNs in a thoughtful way is key. Deployment of assessment and remediation and patch management to ensure these security products are kept up to date is also very important. The IT manager needs to understand what he has to do to protect his devices and needs to understand the behavior of his users. He needs to understand how often his users are accessing the Internet in the absence of a VPN and what kinds of networks they're connecting to—such as wireless or shared broadband. And he needs to know what kinds of attacks are happening and how to protect against those.

It's important to note: VPNs protect the data moving between the laptop and the enterprise—they don't protect the laptop itself from being compromised. They don't address whether the user credentials used to get on to the device were administered properly and they also don't protect the enterprise network, which can be infected by viruses transmitted by mobile devices connecting through a VPN tunnel.

How can IT managers install and maintain security procedures on devices?

Put in an automated patch management system that addresses the specific challenges of a mobile environment: whether, for example, the client polls for updates or a server pushes them to users who are only occasionally online; whether the system has the ability to trickle updates over a low-bandwidth connections; or whether you provide the ability to resume updates after a connection has been lost. A patch management system will automatically determine what patches are available, assess the devices and report back to the IT manager. The process needs to be automated because IT departments can't spend their lives looking for patches and getting them to the machine on a timely basis.

Also, to protect against untrusted devices, consider some of the emerging device authentication approaches, such as iPass' DeviceID service. It lets you reliably identify the device as a trusted corporate asset and assign rights, or block access, accordingly.

GET TRUE GAP-FREE PROTECTION BY SECURING YOUR ENDPOINTS

Download the iPass Policy Orchestration White Paper to Learn How to Shore Up Your Network.
www.ipass.com/policyorchestration

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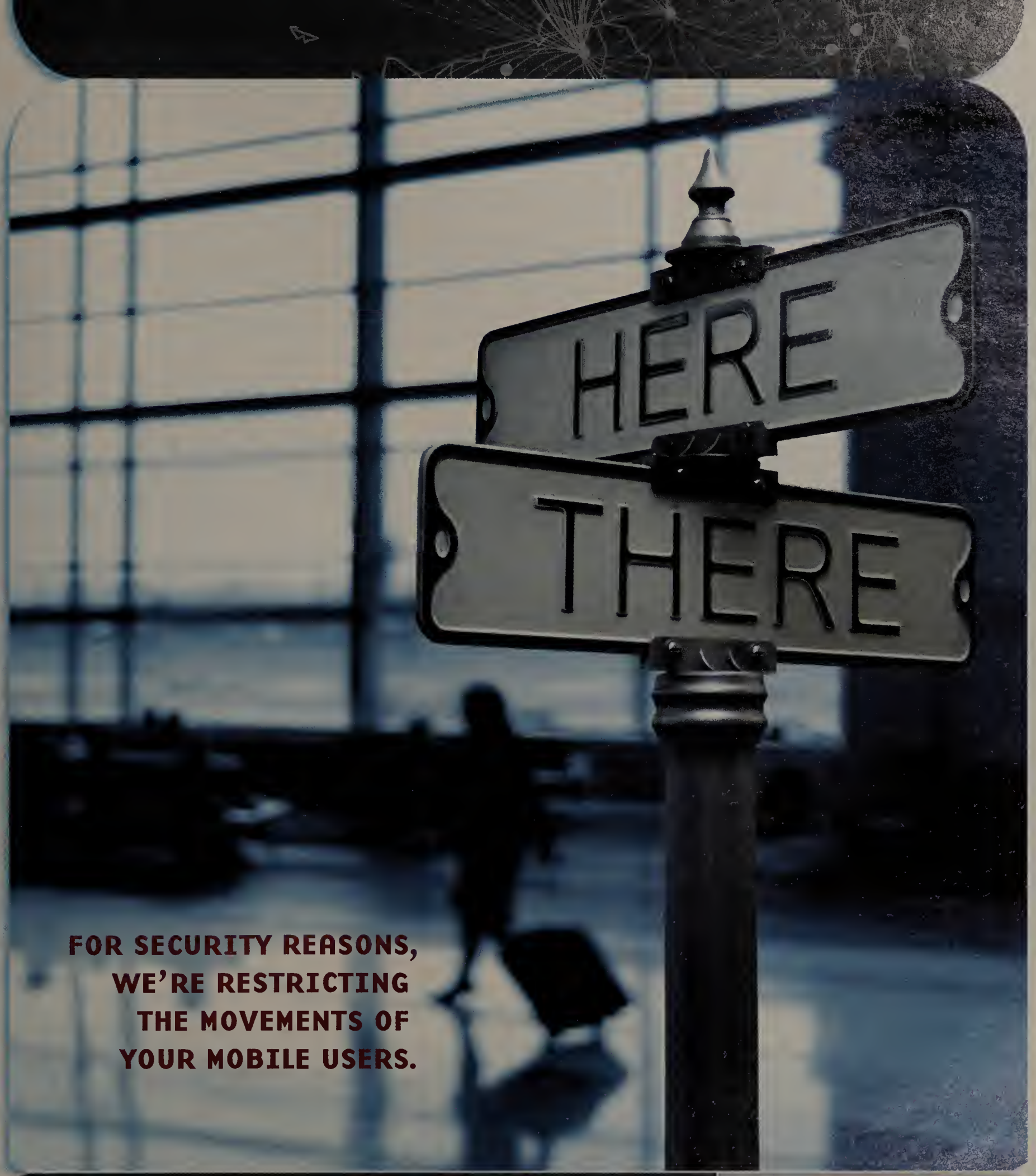

FOR SECURITY REASONS, WE'RE RESTRICTING THE MOVEMENTS OF YOUR MOBILE USERS.

Policy-managed connectivity that doesn't limit how or where they work.

Now, everywhere is There.

Can you guard your corporate network without grounding your mobile workforce? With iPass, they're good to go. The iPass® Endpoint Policy Management service makes sure users are updated with the right security measures before they log on, automatically finding and fixing problems on the fly. So you can stop worrying, and your workers can keep working—everyThere they go.

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COOL YULE TOOLS

2004

By Keith Shaw

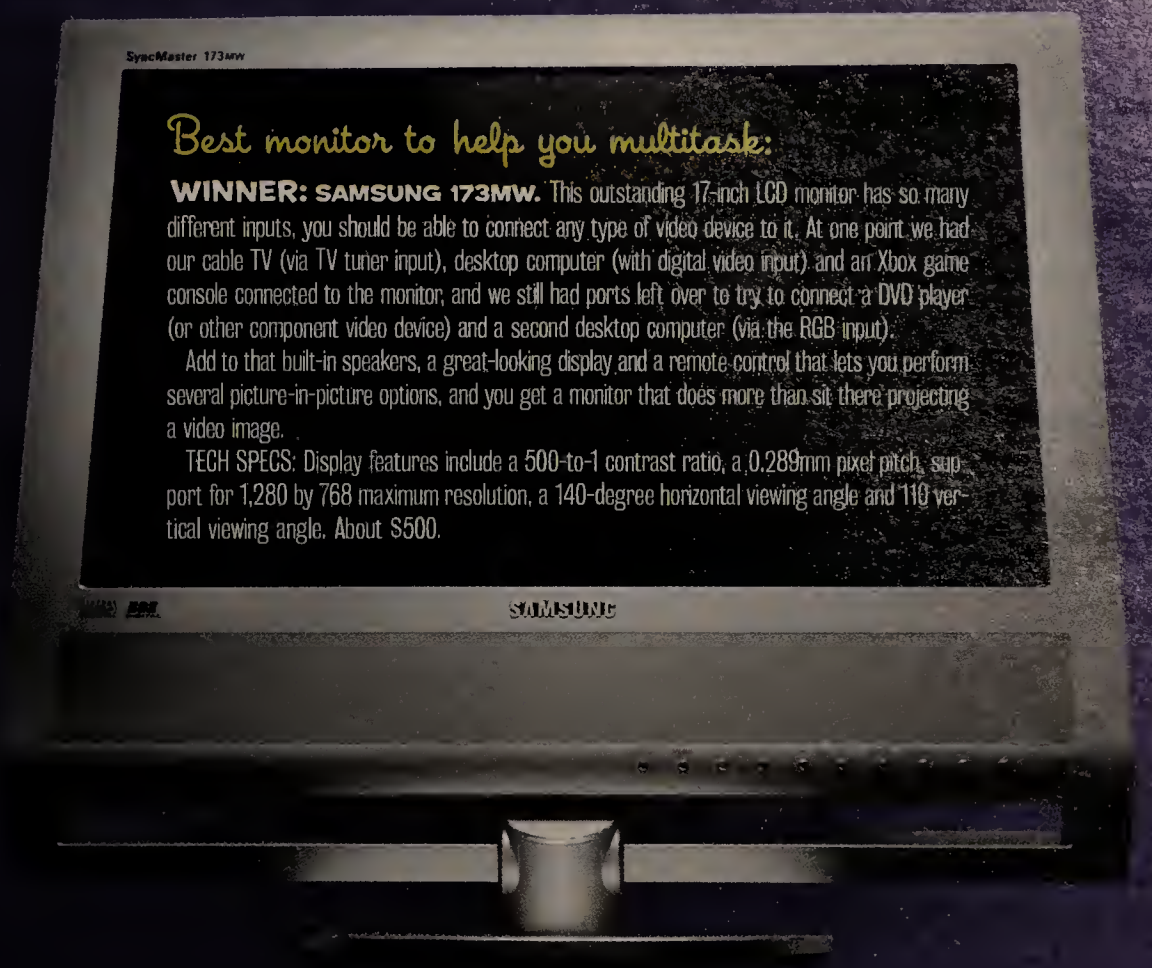
Not only do the holidays mean things like mistletoe, parties and the inevitable trip to the shopping mall (or online shopping mall), but they also mark the start of awards season. The movie industry holds the Academy Awards, the music industry holds the Grammy Awards, and this year *Network World* presents the Globeys — as in snow globe awards — for the coolest gifts for the holidays. After testing more than 130 high-tech products and toys, we are proud to present the fifth annual *Network World* holiday gift guide. If you are too tired from your year of keeping the bad guys out of the network, or too busy connecting and maintaining and upgrading your network to figure out the coolest gifts to buy for friends, relatives or co-workers (or if you need to fill out your own list), we're here to help.

The best part about the Globeys? No Joan Rivers. So let's go to this year's awards and start ripping open some envelopes . . .

Best space-saver:

WINNER: MPC CLIENTPRO 414 ALL-IN-ONE. The first thing you or your friends might say when opening the box is "Where's the computer?" Everything is connected to the monitor, including the CPU, memory, motherboard, two optical drives and all of your inputs (such as USB, IEEE 1394 and other ports). MPC sells 15-, 17- and 19-inch varieties, and it comes with a wireless keyboard and mouse to eliminate even more cables and connections.

TECH SPECS: Intel Pentium 4 processor (3.2 GHz), up to 2G bytes of RAM, 150G-byte hard drive, six USB ports (two on the side, four in the back), Gigabit Ethernet port, optional TV tuner card, printer port, serial port and built-in 802.11g WLAN (eliminating even the Ethernet cable). About $2,000.



Best monitor to help you multitask:

WINNER: SAMSUNG 173MW. This outstanding 17-inch LCD monitor has so many different inputs, you should be able to connect any type of video device to it. At one point we had our cable TV (via TV tuner input), desktop computer (with digital video input) and an Xbox game console connected to the monitor, and we still had ports left over to try to connect a DVD player (or other component video device) and a second desktop computer (via the RGB input).

Add to that built-in speakers, a great-looking display and a remote control that lets you perform several picture-in-picture options, and you get a monitor that does more than sit there projecting a video image.

TECH SPECS: Display features include a 500-to-1 contrast ratio, a 0.289mm pixel pitch, support for 1,280 by 768 maximum resolution, a 140-degree horizontal viewing angle and 110 vertical viewing angle. About $500.

Best non-violent way to irk Microsoft:

WINNER (TIE): AVERATEC 6200 NOTEBOOK and **TOSHIBA'S QOSMIO NOTEBOOKS.** Granted, these systems still have a Microsoft operating system on them, but what we love about these notebooks is that if you want to watch a DVD or play a CD, you don't have to boot up the system. This little jab at Bill Gates makes us slightly giddy.

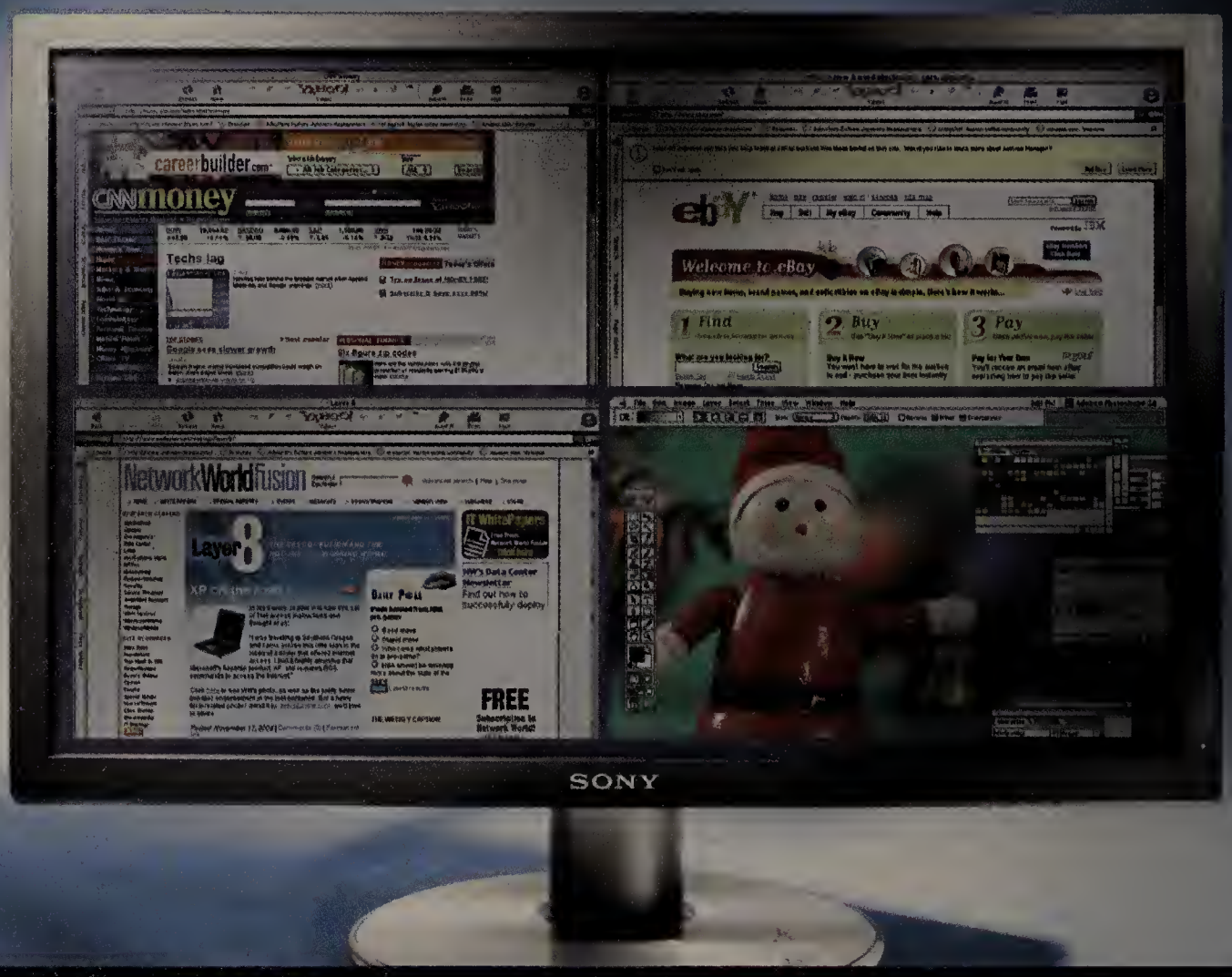
These two notebooks also are not meant for mobile computing, but are more like systems you can throw into a living room. Multimedia features and large screens make these more appropriate for something like a dorm room than sitting in a travel bag. Last year, thin was in. This year it's all about the screen size, baby.

OTHER SPECS: Averatec: AMD Athlon XP-M 2400+ processor, 512M-bytes of RAM, 60G-byte hard drive and 802.11g wireless LAN. About $1,300. Qosmio: Intel Pentium M 735 processor (1.7 GHz), 802.11g and Bluetooth, 80G-byte hard drive, 512M bytes of RAM, four USB 2.0 ports, IEEE 1394 port, and media adapter slots (Secure Digital, Memory Stick, xD). About $2,700.

PHOTOS BY WALTER [illegible] ILLUSTRATION BY MICHAEL PACKARD

Best monitor cable management system:

WINNER: SONY SDM-P234 FLAT PANEL LCD MONITOR. We could talk about the LCD monitor's wide screen (23 inches), multiple video inputs (two analog, one DVI-D), native resolution (1,920 by 1,200), brightness (250 nits) and contrast ratio (500:1), but what really floors us is the monitor's cable management system. We have tried several flat panel monitors, and hiding the cables becomes a chore that makes it not worth the effort. With the SDM-P234, the back slides up to reveal input locations for the different video connections, and then uses easy-to-open clasps that keep the cables in place once you connect them. Hiding the cables for a clean look has never been easier. The wide screen gives the multitaskers on your staff the ability to keep lots of windows open while they are working, instead of having them ALT-Tab all over the place. Get this for your highly motivated staff members or just splurge this holiday season and hook this up to your new kick-ass gaming PC. About $2,000.



Best one-two digital photo punch:

WINNER: EPSON PICTUREMATE PERSONAL PHOTO LAB (left, $200) and **PHOTOPC L-410** (above, $200). One problem with printing your digital photos at home is they often look like you printed them at home. Epson marries the convenience of home photo printing with the professional quality of a lab with its PictureMate Personal Photo Lab. Just over 6 inches high and 10 inches wide, the PictureMate packs a lot in a little package — without the use of a computer. Plug PictureMate into the wall, load the printer with 4x6 glossy photo paper and turn on the unit. Slip your memory card (it supports all the major cards) into the slot and PictureMate reads the card and offers to print up a contact sheet of the photos on your card. Once the contact sheet prints, choose the photos you want and hit print. Or connect to a PC or Macintosh via USB cable (you have to buy your own) and print out photos that have been edited. Take the inkjet printer you've been using to print photos and throw it away (or just use it for e-mails).

The **L-410 DIGITAL CAMERA** is a 4-megapixel digital camera with great photo-taking abilities at a great price. We took hundreds of quality photos consistently, with the help of auto-focus, macro mode and red-eye reduction features. The camera can print directly to a supported printer via USB connection, or take the Secure Digital card out of the camera and insert it into the PictureMate to print from that.

"Worst" travel mouse:

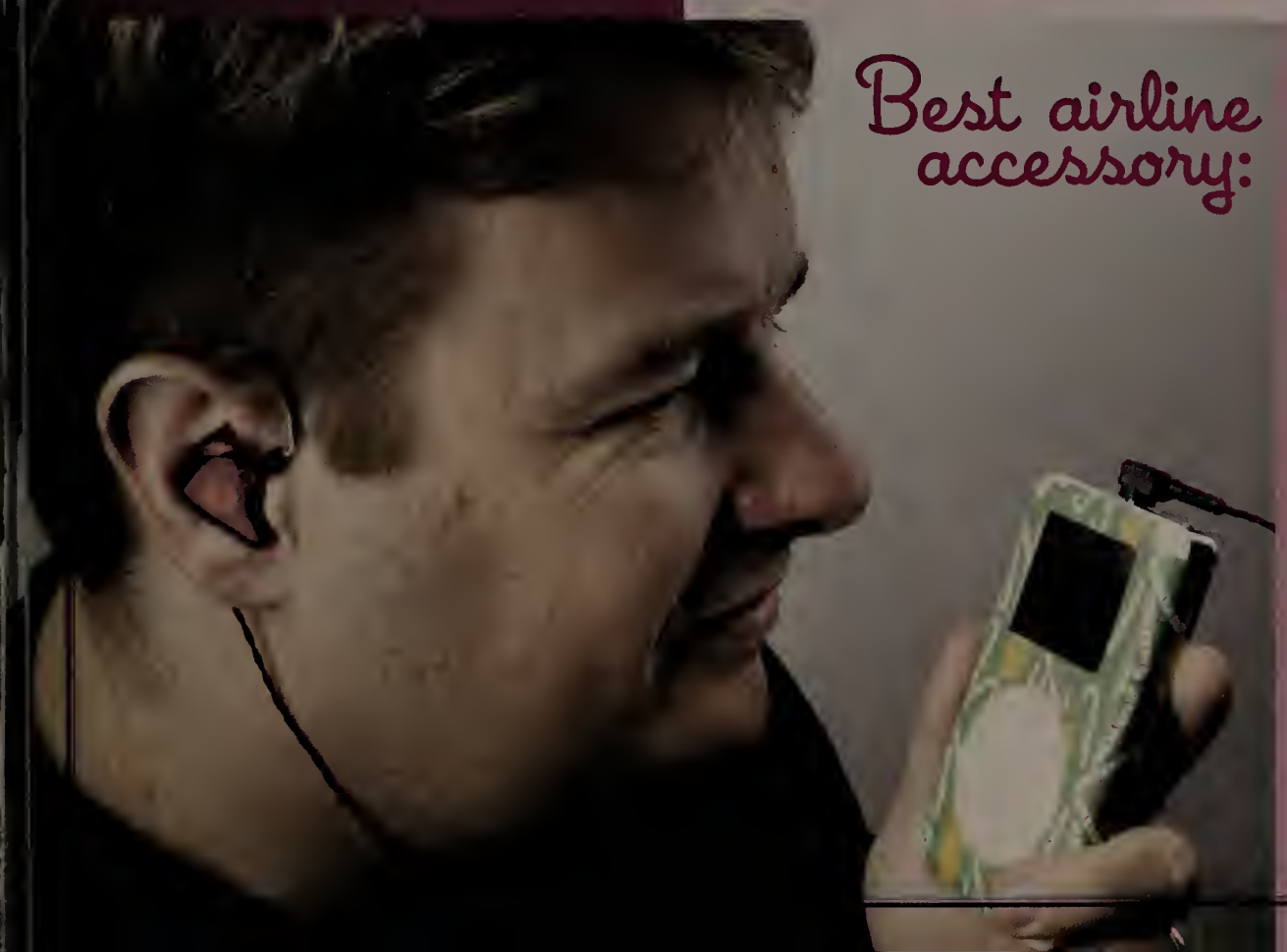
WINNER: MONSTERGECKO PISTOLMOUSE FPS. Don't throw this gun-shaped mouse into a laptop bag if you're going through security. But if you bring this home and connect it to your desktop computer, you will love playing first-person shooter games with this mouse instead of a regular mouse, giving you the feel of actually shooting a gun. Just don't bring it to the bank or the Quickie Mart. About $70.

Best travel mouse:

WINNER: BENQ M310 WIRELESS MINI OPTICAL MOUSE (ABOVE, LEFT). Our favorite feature on this miniature mouse is the compartment inside the mouse that stores the wireless USB connector. When you're done with it, there's no worrying about two components, and there's no cord that you need to wrap up. The mouse runs on two AA batteries, and has a range of about 4 feet, large enough to work around a hotel desktop. About $40.

Best desktop mouse:

WINNER: LOGITECH MX1000 LASER MOUSE (LEFT). Throw out your mouse pad! The cordless MX1000 uses laser technology to accurately scan positional data on almost any surface, including glossy style surfaces (such as a metal filing cabinet). The mouse includes a base station (which connects to your computer) that also acts as a recharger for the battery inside the mouse. The mouse is extremely comfortable and has additional buttons that let you multitask, scroll or go forward or back when Web surfing. About $50.



Best airline accessory:

WINNER: ULTIMATE EARS. If you want to feel like a rock star (without the nasty consequences), check out these earphones (oops, personal monitors). Ultimate Ears personal monitors are molded to the shape of your ears and provide a perfect fit for listening to your iPod or other music player (anything with a 2.5mm headphone jack).

Because they fit perfectly in your ears (and your ears only), there is no outside noise interference. This makes listening to music more enjoyable on an airplane (you don't have to turn up your music player as high to drown out the engines). As a bonus, these act like a noise canceller, so if you don't want to chat it up with that bike tire salesman from Des Moines, you can just pop these in. Because these are custom-fitted, the Ultimate Ears come with a hefty price tag, ranging from $500 up to $900. But once you try them, you'll never go back to foam-fitted headphones again, so it will probably be the last set of earphones (personal monitors) that you ever buy.

Best way to feel like a junior high-schooler again:

WINNER: HP PRINTABLE TATTOOS. The HP iPod differs very little from Apple's iPod for the PC, with one exception: stickers. Or, as HP calls them, "printable tattoos." While the Apple iPod is as white as a hospital ward, HP provides the iPod user with free, colorful and downloadable skins that you can print at home (on an HP printer, of course) and stick them onto your iPod. HP offers a library of tattoos that feature themes (such as candy canes), music artists and other designs. If you don't see what you like, you can design your own. It made us feel like a 12-year-old again, but hey, isn't that what the holidays are about? About $299 for the iPod, $15 for 10 sheets of tattoo paper.

Best way to connect to your teenager:

WINNER: ALIENWARE AURORA DESKTOP GAMING PC. You could take that desktop system that you use to edit spreadsheets or do the home budget on and make it available for computer games, but you wouldn't get the same experience as you do with an Alienware system. These systems are meant for computer games first and foremost and have the latest processor technology, graphics cards and sound cards to exploit those games. We installed Doom 3 on our test system and couldn't believe our eyes or ears about how well this played.

The systems are large (about 2.5-feet high) and loud, but your kids will think you're the coolest parent on the block. Systems start at $1,000.

Best way to feel like you're on the winning team

WINNER: VIEWSONIC 32-INCH LCD TV. This beautiful television set has multiple video inputs (including two component video slots for your high-end DVD player and high-definition converter box, composite video for your VCR, camcorder or gaming console, and S-video), digital audio inputs and regular audio outputs (for surround sound speakers). In addition to playing video, the device can double as a computer monitor, with DVI and VGA inputs. If you want to view your digital photos in a slideshow format, you can insert the camera's memory card (it supports Compact Flash, Memory Stick, SmartMedia, Secure Digital and MultiMedia cards) into the TV and watch the show.

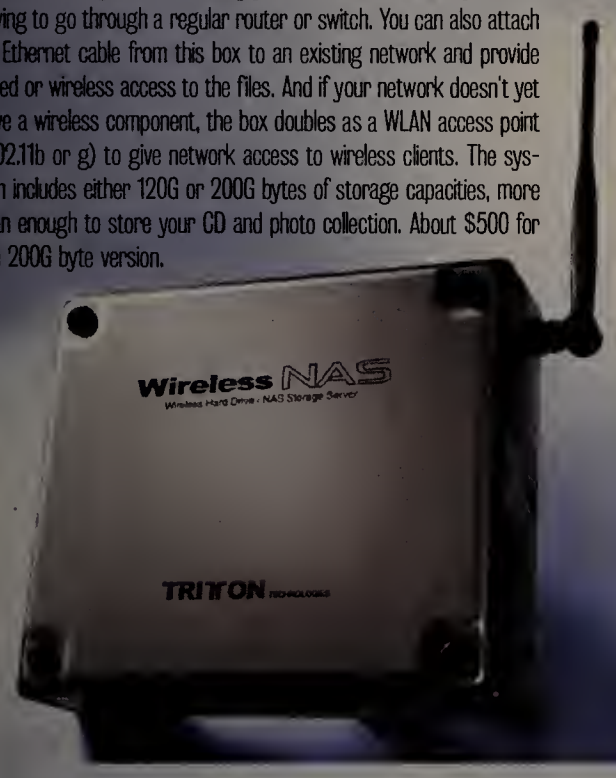
The TV offers a remote control that lets you adjust different widescreen settings (full screen, 4:3, 16:9), and has two external speakers that you very easily can attach to the TV set with screws. About $3,000.

Sweetest "security" system

WINNER: ROBOSAPIEN. Among the features of this remote-controlled robot is a room security/motion detection system. When motion is detected, the robot can squeak and squawk (or even dance). Other features include the ability to walk, pick up objects and make lots of different noises (this robot has attitude). For the really inspired, you can program the robot to do a variety commands in succession. Most of our testers were freaked out by the robot, but it's a fun toy and worth the price. About $90.

Most interesting combination of existing technologies:

WINNER: TRITTON TECHNOLOGIES WIRELESS NAS. This box adds a wireless LAN access point to a network-attached storage system, letting you access files wirelessly without having to go through a regular router or switch. You can also attach an Ethernet cable from this box to an existing network and provide wired or wireless access to the files. And if your network doesn't yet have a wireless component, the box doubles as a WLAN access point (802.11b or g) to give network access to wireless clients. The system includes either 120G or 200G bytes of storage capacities, more than enough to store your CD and photo collection. About $500 for the 200G byte version.



Best tiny treat:

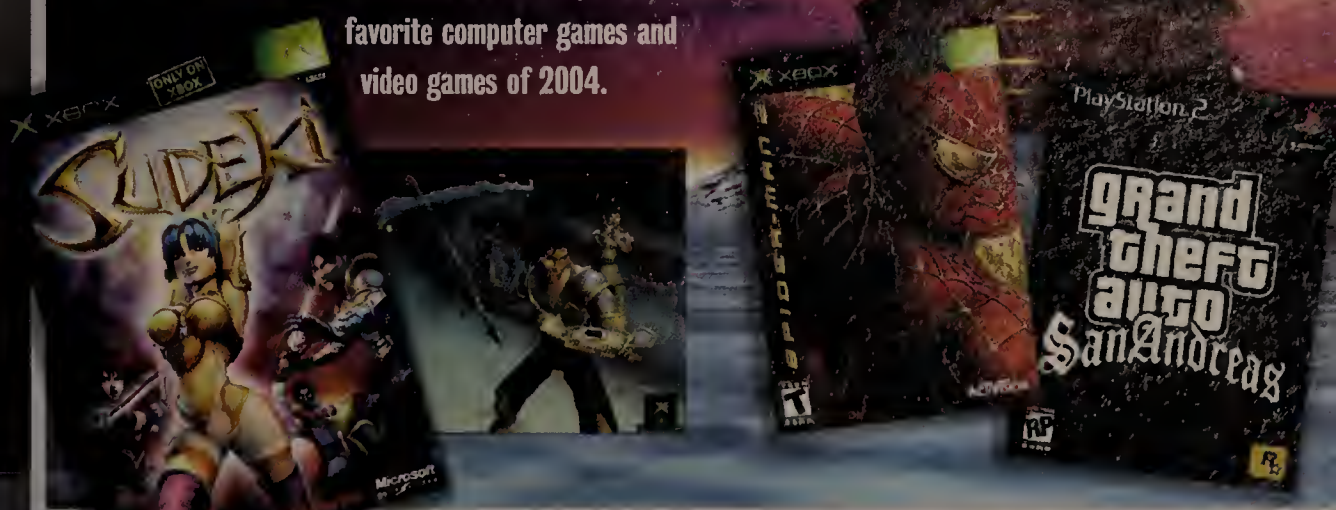
WINNER: KANGURU ZIPPER 2.2G-BYTE HARD DRIVE. Hard drives that fit onto a keychain are so 2002. The latest "must have" storage form factor is Kanguru's Zipper HD, which is about the size of a tiny pager. The hard drive comes with a belt clip and a lanyard, so you can wear the drive around your neck or on your belt. The USB connector flips out to connect, or you can attach an extension cord. Comes in 1G-, 2.2G- and 4G-byte varieties. The 2.2G-byte model we tried costs $180.

Best way to motivate your staff:

WINNER: MAYTAG SKYBOX PERSONAL VENDING MACHINE. Network guys love caffeine, and what better way to store all of those sodas than your own personal vending machine? OK, it's a bit of a stretch, but once you load the sodas into the machine, press the button and listen to the ka-thunk of your soda coming out, you'll be hooked. Get one for your overworked staff, and they'll appreciate you even more. Better yet, put a donation cup on the top and start undermining the local vending machine provider. Who says a network executive can't be a revenue source for their company? About $500.

Just the beginning

You know how those awards shows present the "technical" awards in a separate ceremony? We have something similar with the Globeys, in that we are presenting more than 130 other gift ideas online at www.nwfusion.com, DocFinder: 4729. This includes the always-popular "AfterHours" section, in which we present our favorite computer games and video games of 2004.



Management **Strategies**

- CAREER DEVELOPMENT
- PROJECT MANAGEMENT
- BUSINESS JUSTIFICATION

Keeping IT simple

IT shops standardize and consolidate systems where they can to save money and boost efficiency.

■ BY DENISE DUBIE

For Boeing, streamlining the business of engineering and manufacturing aircraft meant first simplifying its IT applications.

The aerospace giant had built up its business through mergers and acquisitions. By 2000, Boeing's IT services division supported more than 4,500 applications across the company.

"Boeing is a large, global enterprise that was created from the merging of many aerospace companies in the '90s. Consequently, we had a large number and variety of applications. As we became more integrated as a company, our feeling was that our systems were too complex and too costly," says Boeing CIO Scott Griffin.

Boeing set out in 2000 to cut 25% of its applications. By 2004, it had trimmed the number of applications to 3,100 — a reduction of about one-third.

According to Forrester Research, IT consolidation and simplification is a growing trend among companies looking to make their IT shops more efficient, prepare for regulatory compliance audits and cut costs.

"Businesses must look at how to reduce the cost of routine IT maintenance. Simplification, standardization and consolidation are great ways to do that," says Erin Kinikin, a vice president at Forrester. "When companies start looking at multiple systems that pretty much do the same thing, it's questionable if they really need more than one."

For Boeing, it was clear the company didn't need multiple systems across offices around the world that performed the same tasks. Griffin says the company first began to identify all the systems they had in place, monitor how they were used and determine similarities among systems. The idea wasn't to entirely wipe out systems but to find the value in an application, extract the value from one system and transfer it to another that performed similar functions.

"We went looking for overlap in a top-down effort in which we needed to prove the business case for every application," he says. Boeing had 14 proprietary purchasing systems used in-house by its Hughes Satellite Sector and Boeing aviation groups. It was unnecessary to support all the systems, and now two purchasing applications adequately address Boeing's needs.

"Companies need to figure out where it's important for them to innovate and where it's just the cost of doing business," Kinikin explains.

For Scott Donaldson, vice president of software distribution and workspace automation at financial services company KeyCorp in Cleveland, maintaining a standard set of images for workstations not only makes it easier for IT to upgrade and maintain PCs but also helps employees work more productively.

Donaldson uses change and configuration management software from HP's OpenView product line. He says two staff members can efficiently manage 23,000 end-user devices because KeyCorp reduced and standardized the variety of applications and images allowed on desktops. While workstations aren't personalized to individuals, employees are able to work better because there are fewer conflicts among pre-set programs and the support staff can address problems quickly. Using the HP software along with standard systems helped KeyCorp save more than $4 million annually, he says.

"We had 100 different desktop images and the variation made support difficult," Donaldson says. "Now knowing the user has one of a limited number of images, less than 12, makes it much easier to roll out workstations and get them back up and running. Standardizing makes it simpler."

Jim Mileski, systems administrator at Financial Partners in Agawam, Mass., standardizes on network gear, servers, desktops, laptops and applications. The company sends out a download CD to employees each quarter to update server and client machines and keep them all running standard applications.

"Standardization helps automate IT tasks because I'm only supporting six end-user machines in theory, for example, rather than thousands," Mileski says. "The upfront hardware costs to get standardized could be more, but in the long run getting standardized saves in labor costs."

One key phase of IT simplification and standardization is defining business goals and identifying the processes and technology systems that can support them.

"Our approach to application simplification was to complete a business case with our internal customers on every targeted application. When the cost of shutting a system down — data conversion, re-pointing of interfaces, re-hosting of functionality — could be offset by the reduction to sustaining costs, then we removed the system," Boeing's Griffin says.

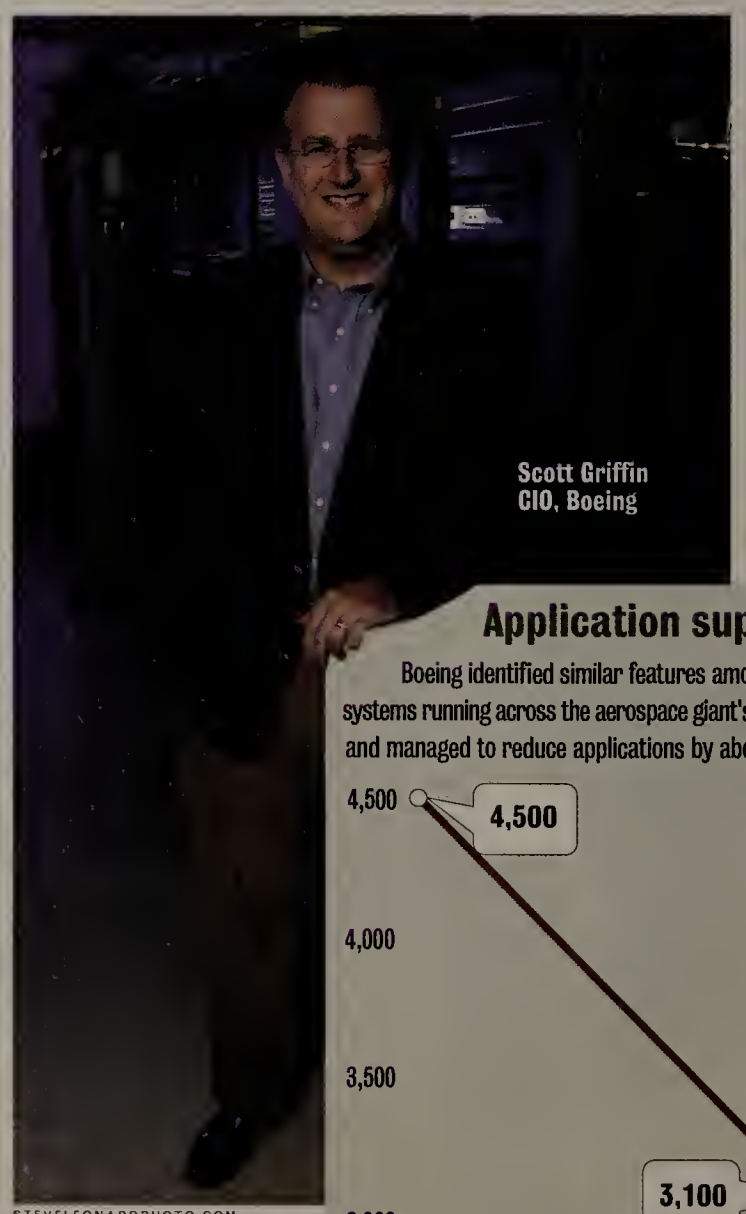
Taking the time to define business processes is critical to any standardization effort, Forrester's Kinikin says. The reason most companies have too many applications all doing similar jobs can be attributed to the lack of standard practices. She advises network managers to first get their arms around desired processes and then compare applications and systems against the processes. The technology that aligns with the people and processes should be kept; those that require a lot of customization should be phased out.

"We find companies that take on simplification or consolidation as part of a redefinition of their businesses are more successful than those just looking to cut costs," Kinikin says. "Depending on the business, it could be more costly to consolidate and it might work better to remain separate and flexible."

In Boeing's case, the firm is pursuing another IT initiative that will impose common systems across the organization. One facet — the processes — of the project uses the IT management best practices laid out in the Information Technology Infrastructure Library.

Boeing will implement a specific computer-aided design tool, CATIA V5, for its business model dubbed Complex Vehicle Design, Build and Support. When a Boeing team begins to build hardware such as a fighter, tanker or commercial airline, it will use the same standard tool other teams building large equipment do. Now Boeing provides new departments, business units or project owners with an IT tool kit that stipulates standard systems, applications and processes and how they should be used to achieve optimal results.

"Now when starting a project, instead of asking people with expertise to relocate to where the proper systems are, we ship the work to them. It's configured to our standards, and they can roll it out and get working more quickly," Griffin says. ■



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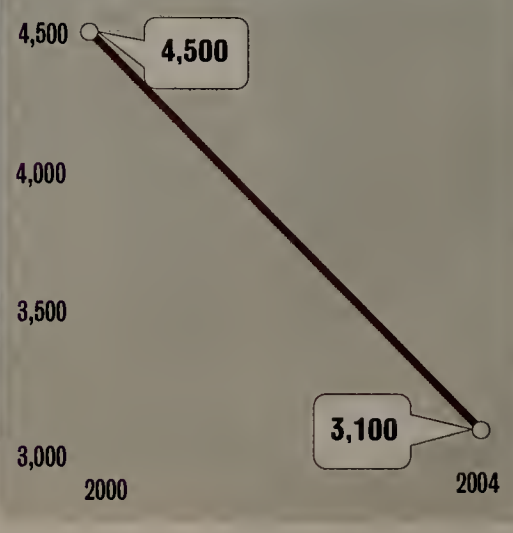

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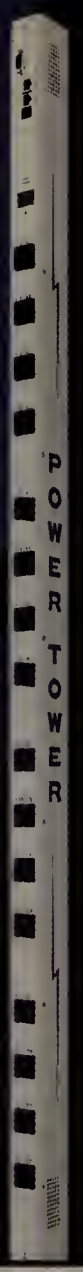

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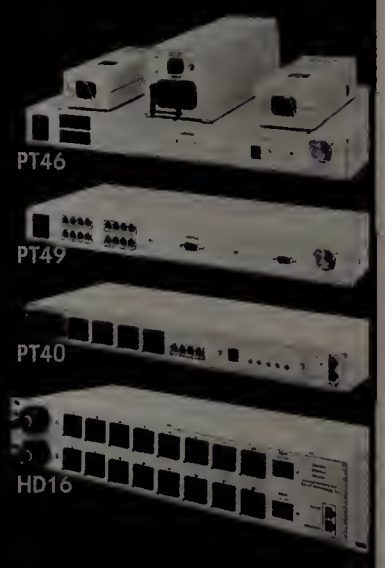

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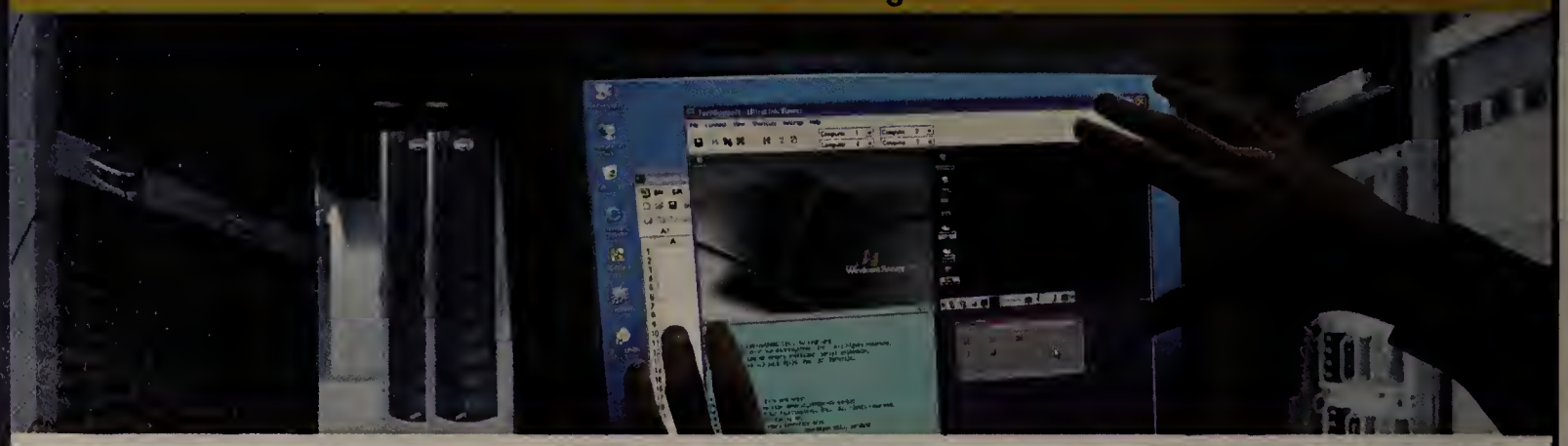

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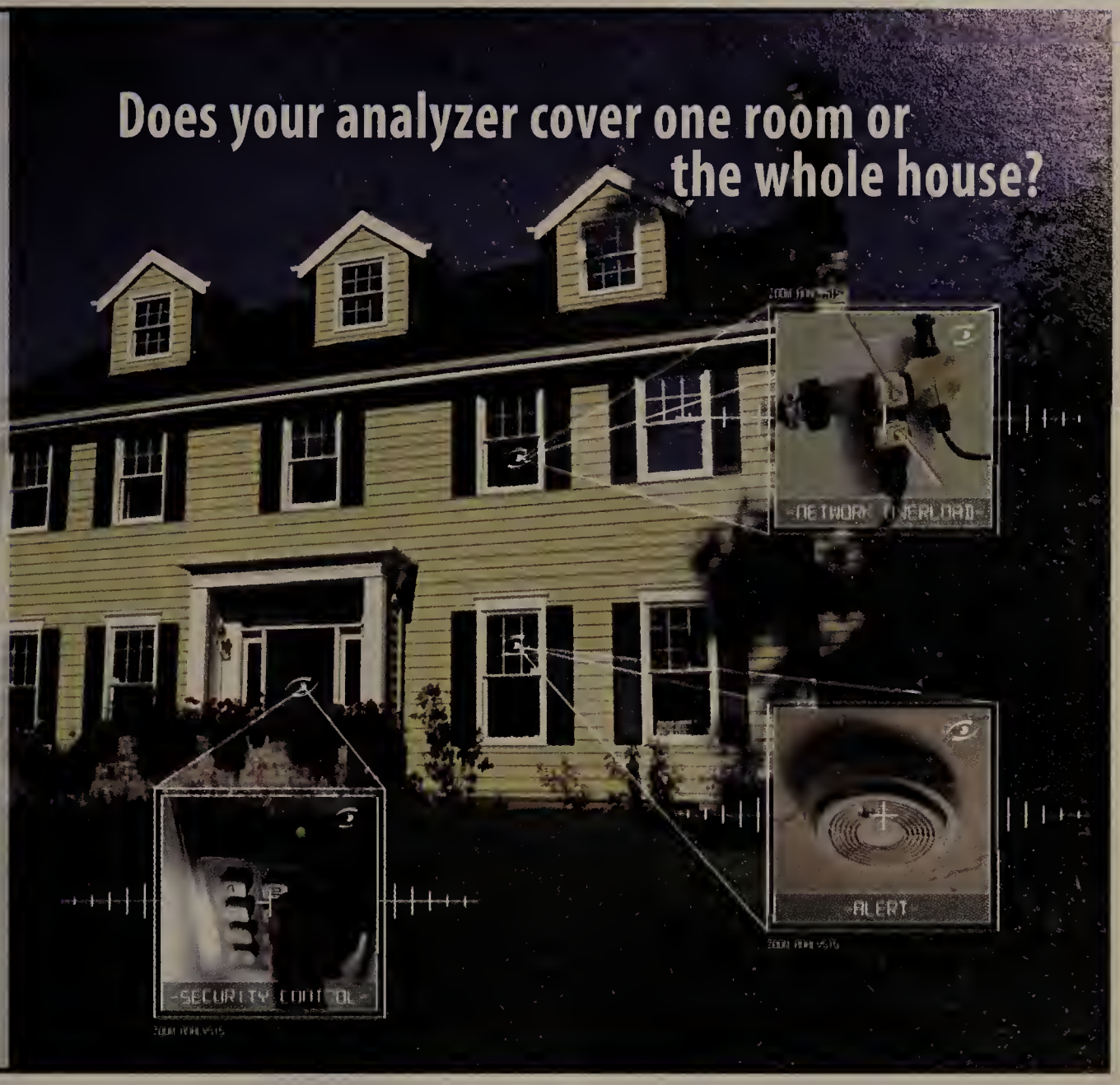

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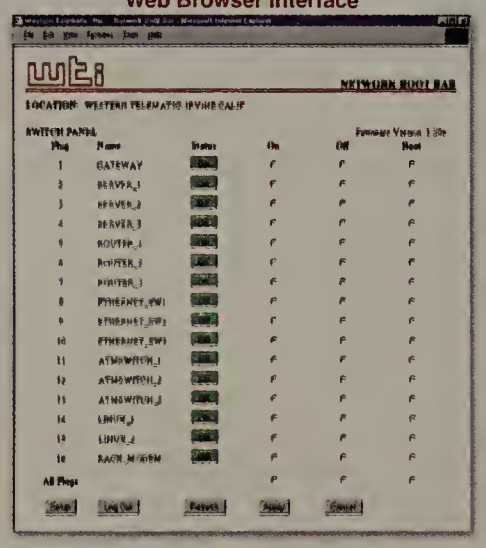

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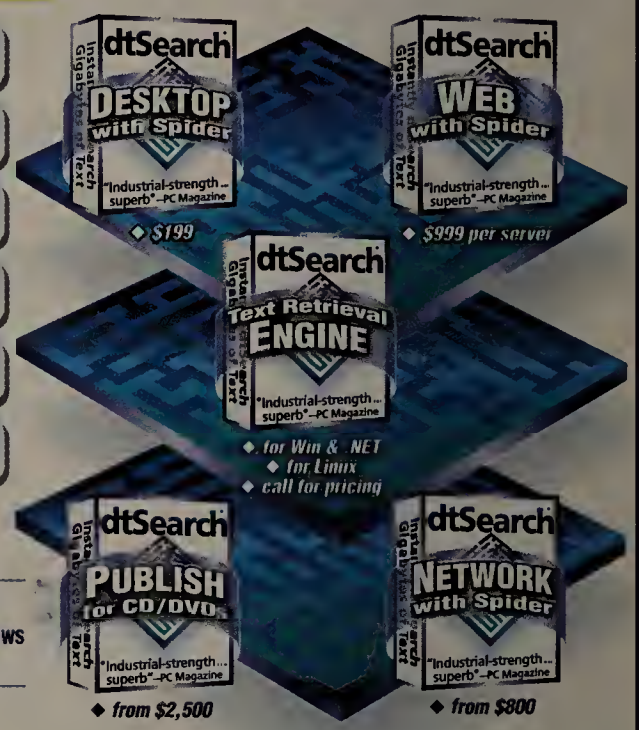

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Software Engineer (2 positions) various locations - Research, design and develop computer software systems in conjunction with hardware product development applying principles and techniques of computer science, engineering and mathematical analysis. Requires 4 yrs exp in job offered or 4 yrs exp as Programmer Analyst or Systems Analyst. Must have 1-yr exp using Active Server Pages and SQL Programming. 5 day, 40 hr/wk, $73,665/yr. Please mail resumes to Workforce Development Programs, PO Box 46547, Denver, CO, 80202 and refer to order number CO5097011.

F/T Software Engineer. Responsible for design, develop, enhance, and maintain Network Storage Server software components using various operating systems and computer networking technologies. Design and analyze the software components for various computer organizations using various data structures, advanced algorithms and database management techniques. Coding and debugging the software components using Higher level and Assembler level languages. Develop user interfaces using E-commerce techniques. Follow software engineering procedures throughout life cycle of development. Must have a Masters degree in Computer Science and Engineering, related field or foreign degree equivalent. Educational background must have included Data Structures and Algorithms, Computer Organization, Operating Systems, Computer Networks, Software Engineering, Database Management Systems, Topics in Design and Analysis of Advanced Algorithms, Higher Level Language Lab, Assembler Level Language lab, and E-Commerce. Salary: Competitive. Send resume to: Srivatsan Ramachandran, AMI, 6145F Northbelt Pkwy., Norcross, GA 30071.

Western Computer is looking for a Business Analyst/Navision Implementation Specialist/Navision Support Specialist/Project Manager with a Bachelors or equivalent and experience in related occupation to analyse, train, implement manage using Microsoft Navision based software. Strong Accounting knowledge is preferred. Please send resumes to Diane, Western Computer, 960 Enchanted Way, Ste 104, Simi Valley, CA 93065 or email dianee@westerncomputer.com.

COMPUTER - Senior Network Engineer (Itasca, IL): Utilize skills in multi-protocol and multi-platform networks to develop networking strategies, network design and sound network management approaches. Use structured methodology and engage in the analysis, design and implementation of complex systems. Development of requirements, project management, and design and implementation of complex systems. Must have a Bachelor's Degree or equivalent in Computer Science, CIS or related field. (Will accept three years of experience in lieu of every 1 year of education) and have 5 years experience in the job offered or in a position implementing Microsoft Directory services and applications. Experience may be obtained concurrently and must include: (i) 2 years design in architecture of Microsoft directory services (ii) 2 years of experience in design level Microsoft System Management Server (SMS) or Microsoft Exchange (iii) 3 years each design experience in technologies that support the following systems DNS, DHCP, and TCP/IP (iv) 3 years experience in drafting of technology documentation (v) 1 year of supervisory experience (vi) 2 years of experience in product management and project management methodologies and (vii) Must be willing to travel nationwide as needed on a 100% basis. Must have legal authority to work in U.S. Send resume to Anthony Murphy (SNE), Spherion Corporation, One Pierce Place, Ste. 550W, Itasca, IL 60143.

SOFTWARE ENGINEER

Duties: St. Petersburg, Florida. Responsible for playing an active role in the life cycle stages of planning, requirement definition, design development, testing and support. Utilizes complex logic and works on and often leads projects that are of a high degree of complexity often involving more system integration and complex architecture. Will also mentor PA's during the life cycle stages and lead moderately complex projects. Coordinate assignments for a programming team. Will be heavily involved at the development level in highly complex customizations and new application developments and will be extremely active in the testing stage in the area of defect enhancement. In addition, will function as the go-to person during the development and implementation stages of the Life Cycle; play an integral role in system integration and the system interaction within the business; play a heavy role in the analysis and design stages; and play a technical leadership role. Requirements: Bachelor's degree in Computer Information systems or equivalent and 4 years of experience in the job offered. Salary: 67,000/year, Hours: 40-hour week, 8AM - 5PM. Contact: Send resume to: Agency for Workforce Innovation, P.O. Box 10869, Tallahassee, FL 32302. JOFL# 2574479.

DSR Management Inc., a fast growing software Development Company is looking for the following personnel:

1. Software Engineer: BS in computer science/related field with 1 year experience in Software. Analysis, design and development with any four of the following: Assembly, C Programming, Computer Interfacing, EMC, EMI, Controller Area Network (CAN), VHDL, Verilog, CPLD, FPGA.

2. Software Engineer: Dsgn & dvlp software sys & applns using Visual C++, Java, JSP, JavaBeans, C#, ASP.NET, ADO.NET, Vignette Story Svr, Tc/Tk & related tools. Perform client & server side scripting. Dvlp relational databases using SOL, Oracle PL/SQL and related technologies. Requires M.S. or equiv in Comp Sc & 1 yr of relevant exper.

3. QA Analyst: Test multi-tiered, web enabled e-commerce application using (VSS, Win Runner, Load Runner, Test Director, VB, ASP). Insure integrity of data access and transmission. Requires BS in CS or equiv, and 1yr exp.

4. Programmer Analyst: Develop /Write computer pgms (Java, J2EE, Struts, XML, Builder) to store, manipulate, retrieve & report data. Requires BS (CS/Math/or Eng), 1yr of exp,& proof of legal auth to work in US.

We accept foreign education equivalent of the degree, or the degree equivalent in education and experience. All of the above positions require proof of legal authorization to work in US.

Apply: HR, DSR Management, Inc. One Rotary Center, 1560 Sherman Ave, Suite 620, Evanston IL 60201 or via email at resumes@dsrminc.com.

Seeking qualified applicants for the following positions in Memphis, TN: Senior Systems Programmer. Devise procedures to solve complex systems and applications problems. Requirements: Bachelor's degree or equivalent* in computer science, MIS, engineering or related field plus 5 years of experience in systems programming. Experience with UNIX, C and logistics code development also required. *Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to Virginia Laster, FedEx Corporate Services, 2847 Business Park, Bldg J, Memphis, TN 38118-2831. EOE M/F/D/V.

Computers: Programmer/Analysts needed. Seeking qual. candidates possessing BS or equiv. and/or rel. work exp. Duties include: Work with 3 of the following: Visual Basic, Java, Oracle, SQL Server, UNIX. Fwd. resume & ref. to: Aequor Technologies, Inc., Attn: HR, Colonial Center, 1500 2nd Ave. SE, Suite #105, Cedar Rapids, IA 52403.

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Computer Professionals (Multiple Openings) Software Engineer, Programmer Analyst, Database Analyst, Systems Analyst, Administration/Network Administrator. Positions offered require the minimum of a Master's degree with a minimum of one year experience the applications listed. In lieu of Master's Degree, employer is willing to accept a Bachelor's Degree along with five (5) years of progressive professional experience. Please note, employer is willing to accept a foreign degree if it is determined to be the U.S. Equivalent to a Master's Degree or the U.S. Equivalent to a Bachelor's Degree along with five (5) progressive professional experience. Must have experience in one or more of the following: Oracle, Microsfot.NET, C, C++, Crystal Reports, Sybase, DB2, Visual Basic, MS DOS, COBOL, VB.NET, MS Access, SOL Server, COGNOS, Micro Strategy, PowerBuilder, VC++, JAVA, XML, ASP, HTML, Unix Network Programming. Extensive Travel and/or relocation. Attractive compensation package. Mail your resumes to: Human Resource Director, American Solution, Inc., 100 Commerce Drive, Ste. 103, Newark, DE 19713.

Network Systems Analyst

Position available for Network Systems Analyst. Duties: Design, install, configure, and support LAN/WAN (Local Area Network/ Wide Area Network) network configurations, architecture and internet systems. Maintain and test Windows NT Servers, network hardware, and software. Analyze user requirements, procedures, and problems to automate processing or to improve network systems. Monitor network system performance to ensure network availability to all system users and perform necessary maintenance to support network availability. Document the processes necessary for computer solutions. Identify needs of development, modification, or update of customer's network systems. Plan layout of new computer system or modification of existing system. Communicate with IT specialists of customers and instruct them to solve and prevent problems.

Requirements: Bachelor's degree in Computer Science or related field. Compensation: $32,000 per year, plus benefits. Working conditions include 40+ hour work week with two weeks paid vacation per annum. Submit resume with complete references to: TransDigital Solutions, Inc., 167 West Main Street, Suite 210, Lexington, KY 40507. Only persons with authorization to work permanently in the U.S. need apply.

All duties of a Manager, Hardware Engineering & NPI, incl managing engrs & technicians, providing direct engg contribution on technical projects & technical input to business dvlpmt activity. Managerial duties incl hiring technical staff, conducting performance reviews, personnel issues, assigning tasks to dept staff, reviewing & approving dept & project expenses & supervising lab facility. Specific technical duties incl systm- & circuit-level dsgn, verification & providing mfg support for RF, baseband & audio applics for wireless communication products such as CDMA, GSM/GPRS/EDGE handsets, data modems, reference dsgns & evaluation platforms; schematic & PCB layout dsgn; dsgn of Rx, Tx & PLL RF circuitry, user interface, peripheral control, radio interface circuitry, & audio circuitry; dvlp test s/ware for high-volume factory test using C, Teststand & Labview tools; installation, optimization, support of test systms in mfg facilities; & analysis of factory test data & processes to identify & resolve factory test issues. Reqs Bach or equiv in Electrical Engg or related field. 5 yrs exp in job offd or 5 yrs exp in h/ware or radio frequency engg & dsgn. Respond to HR Mgr, Job Code #HWMGR-IT, Elektrobit Inc., 11121 Willows Rd NE, Ste 200, Redmond, WA 98052.

IT Application Analyst - Lead. BS in comp sci or related field; exp in Object Oriented Analysis & Dsgn & knowl of Java & J2EE envrmt (Servlets, EJB, JDBC, JSPs, JavaScript, HTML), Struts Framework, XML/XSL, MQ-Series, SQL, DB2, Websphere 5.0, COBOL, exp. working in Mainframe Envrmt. Demonstrated communication skills, knowl of insurance & fin'l services, willing to travel & do on-call support. Resume & cvr ltr to: Jennifer Schwartz, HR, 711 High St., Des Moines, IA 50392-0550. Please refer to specific Job # ACW23175.

Computer Professionals, Product Engineers wanted by TAC Automotive to design & develop converter-Clutch Control, torque converters using CAE, AutoCAD tools. Must have System or Computer engineering degree with exp. Please send resumes to: jobs@tacautomotive.com. EOE. No calls.

Systems People seeks prog. analysts, software engineers, DBAs to design customized applications to meet client's needs. Travel maybe required. Min requirement is BS/MS with IT exp. Competitive wage with full benefits, sponsor H/Green Card. Contact: jobs@systems-people.com. EOE.

Bioinformatics Programmer wanted to oversee all aspects of comp. network functions in Center for Cancer Systems Biology (CCSB), incl. admin. of multi-platform network & mgmt. of IT infrastructure & oper. syst. for all databases. Will also supervise bioinform. analysts, create & implement bioinform. tools for analysis of functional genomics & proteomics, & dvlp. web-based methods for accessing biological datasets. Must have MS deg. in Bioinform. or Comp. Sc. & 2 yrs. Bioinform. dvlpmt. exper., incl. exper. working on multiple platforms (Unix/Linux, PC, Mac), & exper. in genomic or proteomic data analysis using AceDB, MYSOL +/or Oracle, Perl, C++ & Java. Send resume to Lorraine J. Barnes, Intemational Services, Dana Farber Cancer Institute, 44 Binney St., Boston, MA 02115.

BCCUSA Inc - South Portland, ME needs experienced Programmer Analysts having a Bachelors Degree with minimum two years of progressive experience in J2EE architecture with understanding of Enterprise System and Application architecture. Must also possess knowledge of RUP & UML methodology, Requisite Pro, Rational Rose, Rational Clear Quest, Rational Clear Case, MS Visio, MS Project, JAD sessions, Winrunner, and Loadrunner. Competitive salary and benefits.M-F, 40 hours/week.Please mail your resume to BCCUSA Inc., HR Dept, 650Main Street Ste 201, South Portland, ME-04106.

Assistant Mgrs. of Operations needed. Seeking qual. candidates possessing MS or equiv. &/or rel. work exp. Part of req. rel. work exp. must include 1 yr working in client support to resolve customer IT issues & working w/ SQL Server. Duties include: analyze business processes - implement IT solutions, working w/ Oracle. Fwd. resume & ref. & salary req. to TRRS Imaging (USA), Inc., Attn: HR, 200 Middlesex Essex Tpk, #300, Iselin, NJ 08830.

Network and Data Communications Analyst sought by Amplidyne, Inc., a Telecom Network Solutions company. BS in Comp. Science/Electronics Eng. or a related field with 5 yrs. exp. Respond by resume to HR Dept., 16075 E. 32nd Avenue, Unit A, Aurora, CO 80111-1529

Senior Account Manager wanted to source and support new technical business development opportunities. Must have Bachelor's degree in Electrical Engineering, Computer Science or related field and 4 years experience in corporate sales in the software services industry, including 2 years experience with project management and software development. Send resume to Hilary Gosselin, Human Resources Manager, Lionbridge Technologies, Inc., 492 Old Connecticut Path, Framingham, MA 01701.

Applications Engineer needed to dsgn & dvlp s/ware for telecom interoffice, narrow/broad band provisioning using Enterprise Architect CEM, Tuxedo, C++, Unix, Java, J2EE, XML, XSLT, Informix, Oracle; dsgn & dvlp interfaces for OS & GUI using Java Swing, JSP, EJB, XHTML, SVG & WebLogic. Apply to: Global Consultants, Attn: Hireme, 8800 Grand Oaks Cir #100, Tampa, FL 33637.

Software Engineer (Huntsville, Alabama) - Java application programmer responsible for development, integration, and testing of telecommunication products into a distributed, multi-client, multi-server Element Management System. Must have a Bachelor degree or foreign degree equivalent in Electrical Engineering or Computer Engineering. Education or work background must include one year of experience in Java application programming. Must have legal authority to work in U.S. Send resume to D. Tober (REF:SE), ADTRAN, 901 Explorer Blvd., Huntsville, AL 35806.

Programmer Analyst needed w/Bachelors degree or Foreign Equivalent in Engg. or Comp. Scie. or Math & 2 yrs. exp to analyze & design Entity & Functional Models using Oracle Designer. Create & test Java programs that interact wth Oracle Database using JDBC & JSERVER. Create applications using Oracle Workflow. Create & test voice applications using VoiceXML & Voice Grammars using Nuance Grammar Builder. Develop custom reports using JReports. Implement & maintain Data Exchange using MQSeries. Mail resumes to: Bhrigus Inc., (Ref #001) Cantera Center, 4320 Winfield Road, Suite 200, Warrenville, IL 60555.

Software Developer

To develop applications for a variety of educational systems and business applications using Asp/Asp.NET, C++, C# and VB6 and using MS Visual Studio as coding environment. Req. MS degree In Comp. Sci., Info. Mgmt or other related field, familiarity with double-byte character sets/Unicode for Asian language-based application interfaces, and profic. in Asp/Asp.NET, C++, C# and Visual Studio. 40hrs/wk. Send resume & cover letter to Fred Ferguson, Curriculum Associates, Inc., P.O. Box 2001, N. Billerica, MA 01862-9914. Fax: (978) 663-0521.

Programmer Analyst needed w/2 yrs exp to analyze, design, develop and debug the code for n-tier multi channel (web & voice) system using VoiceXML, XSL, Java, J2EE & XML. Test & deploy the voice applications on Tellme platforms. Build the security applications using RSA encryption & SOAP web services. Build Java GUI applications using Java Swing APIs, JAXP & Xalan. Mail resumes to: Bhrigus Inc. (Ref #002) Cantera Center, 4320 Winfield Road, Suite 200, Warrenville, IL 60555.

COMPUTERS

Product Verification Engineer needed to plan & conduct system tests and analyze/configure/test L1-L3 network protocols in support of product develpmt in Raleigh NC. Req's MS+3 yr. experience or BS+5. Exp must include: UNIX; network hardware & OS; automated test infrastructure; analysis, configuring & testing OSI L1-L3 protocols; Shell/CGI/Tcl scripting; Java & C/C++ programming. Principals only. Mail resume to C. Cocchiarella/Re:AT, Spirent Communications, 26750 Agoura Road, Calabasas, CA 91302. EOE.

System Engineer w/ 2 yrs exp to design, configure & implement s/w applications using HP Open View Suite, Spectrum network management; configure Cisco routers & switches using Cisco works. Set up IP protocols with SNMP & MIB, MS – SQL & Oracle database on Sun Solaris, HP Unix & Windows. Mail res. to: CompuInfo, 1119-1D, Crab Orchard Drive, Raleigh, NC 27606.

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F/T Software Engineer. Responsible for designing, developing, enhancing, and maintaining Network Server Management Software Components using various operating systems and computer networking technologies. Design and analyze the software components for various computer organizations using various data structures, database management, and distributed computing techniques. Coding software components using both assembler level and higher level languages. Develop user interface using e-commerce concepts. Follow Software Engineering procedures throughout life cycle of development. Must have a Masters degree in Computer Science and Engineering, related field or foreign degree equivalent. Educational background must have included Data Structures and Algorithms, Computer Organization, Distributed Computing, Operating Systems, Computer Networks, Software Engineering, Database Management Systems, Higher Level Language Lab, Assembler Level Language Lab, E-Commerce. Salary: Competitive. Send resume to: Srivatsan Ramachandran, A.M.I., 6145-F Northbelt Parkway, Norcross, GA 30071.

UNIX Systems Administrator (NYC)

Software Company located in Lower Manhattan seeks a UNIX Systems Administrator

The following are the main responsibilities:
• Analyze & evaluate user needs;
• Design & configure systems;
• Implement, test & write scripts as needed to ensure system/network performance;
• Write & execute scripts, maintaining library of test scripts & creating overall testing infrastructure.
• Perform hardware install and maintenance.Requirements:
• BS in Engineering/Computer Science
• 1 year experience as a UNIX System Administrator
• Shell Programming - Korn, Bourne, csh and perl,
• Familiarity with Solaris and Linux operating systems.
• Must be familiar with the Sun enterprise class servers.
• Must be familiar with Intel based servers.
• Should be familiar with UNIX security.

Apply to: Royalblue Financial Corp., 17 State Street, New York, NY 10004, Attn: CTM-WC.

Programmer Analysts needed. Duties: Perform process re-engineering and improvement. Gather and evaluate requirements, translate business requirements and prepare technical specifications. Provide system development initiatives and complex reporting and analysis to support various functions. Devise, develop and test applications using appropriate end user tools such as PCSAS, COGNOS and SQL. Validate data integrity by ensuring timely maintenance, updates, code sets, procedure and diagnosis codes. Work with Teradata and Oracle databases on Unix platform. Install programs and procedures. Perform complex data mapping, data mining, data extraction and manipulation. Travel to set up systems, interact with clients and train users at various locations for different short and long term projects. Req: BS or equiv in Comp Sci, Engg, Math or related & 2 yrs in the job offered or 2 yrs as a comp prof. Experience must include 2 yrs working w/PCSAS, Teradata and COGNOS. Sev. Pos. avail. Sal. $44,400.00/yr, 40 hrs/wk, 8:00AM-5:00PM. Send resume to PA Career Link/Job Service: Site Manager, Beaver County CareerLink, 2103 Ninth Avenue, Beaver Falls, PA 15010-3957, Reference Job Order No. WEB 472887.

Computer Professionals (Multiple Openings) Software Engineer, Programmer Analyst, Database Analyst, Systems Analyst, Administration/Network Administrator. Positions offered require the minimum of a four-year Bachelor Degree or a foreign degree determined to be the U.S. Equivalent to a Bachelor's Degree; also require a minimum of one year experience in one or more of the following: Oracle, Microsfot.NET, C, C++, Crystal Reports, Sybase, DB2, Visual Basic, MS DOS, COBOL, VB.NET, MS Access, SQL Server, COGNOS, Micro Strategy, PowerBuilder, VC++, JAVA, XML, ASP, HTML, Unix Network Programming. Extensive Travel and/or relocation. Attractive compensation package. Mail your resumes to: Human Resource Director, American Solution, Inc., 100 Commerce Drive, Ste. 103, Newark, DE 19713.

Sr. Software Engineer wanted to mng. software dvlpmt. projs. for n-tier, web-based CRM apps. for use by the invest. mngmt. & energy indust. Must have B.S. deg. in Comp. Sc., Eng. or related field & min. 3 yrs. exper. developing n-tier, web-based apps. using Microsoft.NET framework (including ASP.NET, Visual C#.NET & Visual Basic.NET), XML & Web Services, COM/ActiveX components, incl. COM+ & SQL programming + object-oriented analysis, design & programming exper., incl. UML, & exper. developing & integrating CRM apps. & developing commercial apps. Send resume to Steven Nothern, CFO, Satuit Technologies, Inc., 80 Washington St., Unit M-50, Norwell, MA 02061.

Statistical Modeling Analyst, Wachovia Corp., Charlotte, NC. Design, dev., implement analytical programs, algorithms & scoring models re: predicting customer behavior, profitability, market drivers, product ID, & marketing campaigns. Reqs. BA in Math or Stats. 2 yrs. exp. in pos. offered or as a Stat. Programmer Analyst, TA, or Software Dvlp. The 2 yrs exp. must incl. bldg. adv. quant. models using algorithms & scoring models, conducting stat. analysis using SAS, SPSS or similar tools predicting customer behavior based on large quantitites of data. 1 yr. exp. must incl. defining & assessing marketing strategies in a financial instit. M-F, 8-5, Send resume to Beth Shook, Wachovia Corp., 1525 West W.T. Harris Blvd., NC0134, Charlotte, NC 28262-0134. No phone calls.

F/T Research Software Engineer for NM location. Responsible for performing database design, system configuration, data conversion planning, application design and development, documentation development, and application and system training. Configure hardware, software, and network components of GIS and LIDAR systems. Assist clients in developing practical programs that maximize the benefits of their GIS investment. Analyze clients' system operations to determine opportunities for increasing production efficiency. Must have a Master's degree Computer Science, related field, or foreign degree equivalent. Must have 2 yrs. of exp. in job offered or a position w/ same duties. Salary: Competitive. Send resumes to: Sheila Seals, Spectrum Mapping, LLC, Ref: 222, 28969 Information Lane, Easton, MD 21601.

PROG. ANALYST - ORACLE APPLNS

Perform analysis, dsgn & implementation on Oracle applns sys. software incl. quality assurance, production support, documentation & testing for Enterprise Resource Planning projects. MS in Comp. Sci. or Electrical or Electronics Engnrg + 2 yrs exp. in job offered or as a Software Engnr - Oracle Applns. Exp. must incl. Oracle applns, C, C++, PL/SQL, OOAD & UML. High mobility preferred. 40 hrs/wk, OT as reqd, 8 am - 5pm, $66,730/yr. Submit resume to: Manager, Butler County CareerLink, Pullman Conference Center, 112 Hollywood Drive, Suite 101, Butler, PA 16001-5699. Refer to Job Order No. WEB 474249.

Software Engineers to lead teams to analyze, design, develop client/server, web appls in ASP, XML, ActiveX Controls, VB, ASP.NET, VB.Net, ADO.Net, HTML, Oracle, SQL Server, Windows etc; create complex business components using COM dynamic link libraries and implement them in multi-tier envir using MS Transaction Server; trouble shoot software/hardware problems; interact between project members, vendors, customers and recommend hardware/software upgrades; provide training to end users, team members. Require: MS in CS/Engg (any branch) & 3 yrs exp in job offered or a BS or foreign equiv in CS/Engineering & 5 yrs of progressive exp in IT. Travel Involved. Comp.Salary F/T. Resumes: HR, Synergy America, Inc., 6340 Sugarloaf Parkway, Ste 140, Duluth, GA30097.

F/T Computer Programmer. Responsible for analyze, review, modify and implement new and existing programs using iSeries, AS/400 systems, and RPG/400, Delphi and Java programming Languages. Develop specifications using systems analysis. Adapt programs to new requirements and monitor their performance. Must have a Bachelor's degree in Computer Science, Electronic Engineering, related field or foreign degree equivalent. Must have 3 yrs. of exp. in job offered or a position w/ same duties. Salary: Competitive. Send resume to: C. Lesker, Datatex TIS, Inc., 11810 Northfall LN, Bldg. 1203, Alpharetta, GA 30004.

Programmer Analysts to analyze, design web appls using Java, VB, Java Script, VBScript, HTML, DHTML, ASP, PHP, Access, Oracle, SQL Server, Dreamweaver, Active X, IIS under Windows, UNIX OS; generate batch reports; conduct user req/feasibility studies & systems analysis; maintain, document, support, test and debug appls. Require: B.S. or foreign equiv in CS/Engg(any branch) with 2 yrs exp in web based appls. High Salary. F/T. Travel involved. Resume to: HR, Salem Associates, Inc., 405, 6th Ave., Ste102, Des Moines, IA50309

Software Developer, under supervision, will develop, test and implement client-server web based applications using Com, MSMQ, C, C++, Pl/Sql, HTML, Visual Basic, Windows 95, VB-Script, JavaScript, Cobol, Network technologies and Oracle. Will be responsible for complete life cycle of the project. 40 hrs/week, Mon-Fri, 8am to 5pm. Bachelor's Degree, one year & 6 months experience required. Competitive salary. Send resume to Manager, Yetma Investment Ltd., 5001 W. Fond du Lac Ave., Milwaukee, WI 53216.

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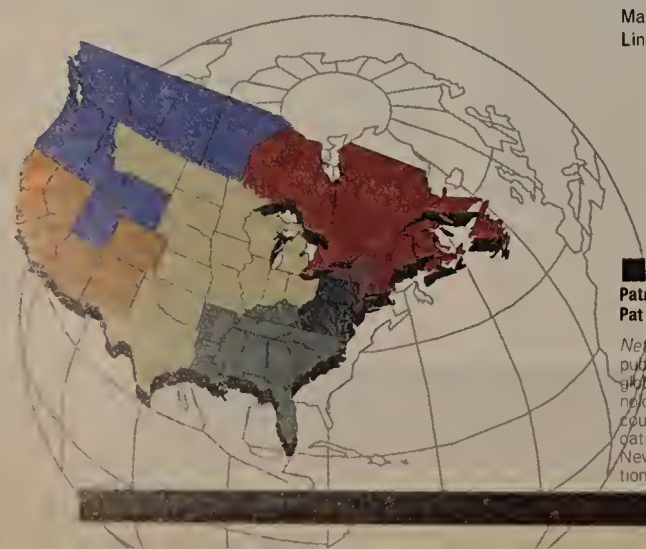

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Proofpoint's modules work with its Protection Server software and Messaging Security Gateway appliance. The Content Compliance module helps organizations enforce policies regarding the type of information that can be sent outside the company, as well as file attachment types and sizes, says Andres Kohn, director of products with Proofpoint. The module scans outgoing e-mail and stops messages that violate policies defined by a set of logical rules that each company establishes.

Content Compliance will become a standard part of Protection Server, which costs between $2 and $20 per user, per year, depending the number of users.

The Digital Asset Security module, also designed to protect confidential information, leverages Proofpoint's MLX message classification techniques found in its antispam filters to analyze a company's classified documents and then scan outgoing mail to look for a match. Flagged messages can be blocked, quarantined or encrypted by third-party software, depending on a company's preference, Kohn says. The module will cost between $4 and $40 per user, per year.

The third module, called Proofpoint Regulatory Compliance, helps organizations comply with federal regulations, such as the Health Insurance Portability and Accountability Act. It scans for content deemed "non-public" by checking against a dictionary of keywords. The module will cost between $2 and $20 per user, per year.

IronPort's upgraded Reputation Filters are designed to stop spam before it traverses the Internet, says Peter Schlampp, senior director of product management. IronPort estimates more than 70% of spam comes from large ISPs that offer broadband services to consumers whose PCs are hijacked by zombies, programs that turn PCs into spam servers.

The upgraded Reputation Filters scan an ISP's outgoing mail stream looking for telltale signs of spam activity, such as an IP address that suddenly sends excessive amounts of mail, and blocking it accordingly.

While IronPort says this feature will benefit its ISP customers, it also will help enterprise network shops identify PCs that have been taken over by zombie programs and shut them down.

The upgraded reputation filter is free to customers of IronPort's C-Series appliances, which are priced starting at $9,950. ■

Shaken or stirred?

Scanning outbound messages is the latest addition to what vendors refer to as the "cocktail" approach to fighting spam. Other ingredients can include:

- Bayesian filters.
- Blacklists and whitelists of known spam sources and valid senders, accordingly.
- Content and URL scanning.
- Heuristics.
- Message fingerprinting, digital signatures or other pattern-detection technology.
- Reputation services that rate IP addresses.
- Sender authentication.

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VPNs

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those costs can plummet. "Compare that with $45 a month average per site for DSL connections and the upfront cost — anywhere from $350 to $1,295 [per site] of the VPN hardware," he says.

Even with these big savings in mind, businesses have to keep in mind that VPNs are full of cost "gotchas."

Lancet Technology, a medical software company in Boston, in the past has created VPN connections with its business partners using Cisco and Nortel VPN clients, says Kevin Mulligan, CIO of the firm. But the clients are tricky to configure and the partners generally don't have experience with them.

Plus, the VPNs require reconfiguring firewalls so VPN traffic can pass through, which winds up costing Lancet time on the phone to help out.

"We had more headaches with them," Mulligan says. He had to spend a lot of time negotiating with partners to get them to agree to the VPN in the first place, the major objection being that firewall reconfiguration goes against their corporate policies.

Similarly, being on the receiving end of such a proposal and joining a partner's existing VPN can tie up valuable time, he says, which again translates into expense.

Customers trying to comply with requests to use the same client ran into trouble, creating more work for Lancet, Mulligan says. "They would call us, and we would call Cisco technical support, and six hours later we might resolve it," he says, but by then the day was shot. Instead the firm has switched to a managed SSL remote-access service that requires no client and no firewall reconfiguration.

Even when VPNs are successful, their very success can cut in on expected savings, says Dan King, network administrator for The Mental Health Center of Greater Manchester, N.H. He replaced point-to-point T-1 lines from four satellite offices to the main office with a SonicWall IPSec VPN. The switch saved enough money to give a fifth, unconnected office an ISDN-based DSL line. But the new connections gave each office its own Internet access, meaning Internet traffic was no longer funneled through the lone Internet connection at the main site. These new connections also provided faster downloads, a performance boost that resulted in more use. And when he was offered a price reduction on his 768K bit/sec DSL lines or an increase in bandwidth to 1,024K bit/sec, he gave up the savings for the bandwidth.

Customers should check out proposed VPNs in all their probable uses before committing to them, says Tony McCafferty, director of IT for Hualalai Resort in Kailua Kona, Hawaii. It can eliminate a lot of costly swapping, he says.

The resort needed remote access for traveling executives, and he believed an IPSec VPN was the way to go. Initially Check Point's Secure Remote clients were installed in company laptops, which worked well much of the time. But at hotels and at business partner sites, there were problems crossing firewalls, resulting in calls for help.

SSL remote

McCafferty decided to try SSL remote access because it required no special firewall configuration. The gear he bought though, made by Aventail, was too complex to get running properly.

"The unexpected cost on our part was trying to troubleshoot," he says. Software upgrades and even having the company ship him a configured unit didn't solve the basic problem of getting it to work with Outlook Web Access.

After about nine months of trying he gave up and bought an SSL gateway from Enkoo, a vendor that designed its gear to be easy to set up. The gateway lacked features of other SSL gear, but it had enough to meet Hualalai's needs, he says. He only recently turned off the Check Point gear. "We had so much trouble getting the Aventail up and running we couldn't get rid of the IPSec altogether," McCafferty says.

When customers buy VPN gear, they have to accept that it is more equipment on their network that requires maintenance. "When you buy security gear, you are constantly installing updates and patches," says Robert Whiteley, a VPN analyst with Forrester Research, and that can mean a big investment in time. "If you're an enterprise worth your salt, you're going to test [the updates] first."

VPN gear also can carry peripheral expenses, Whiteley says. Securing VPNs might involve authenticating remote users with digital certificates, another investment in time and education. "It means managing digital certificates and making sure they are properly deployed," he says.

Businesses also face the cost of upgrading as technologies improve, says Desmond Lee, VPN project manager for group IT infrastructure and operations at PartnerRe, an international reinsurance company in Bermuda.

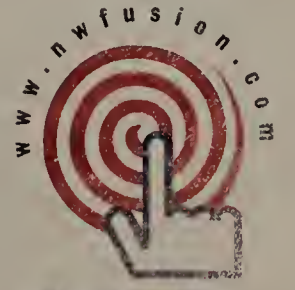
The company has decided to forego an upgrade of its IPSec VPN equipment from Check Point because it requires replacing gear at 15 sites. Instead, it is switching to just three SSL remote-access gateways from Juniper.

SSL requires less equipment, and it comes with software to check the security of the remote machines, something that would have meant an upgrade with Check Point, Lee says. ■

Avoid VPN surprises

Careful planning can help businesses avoid unexpected VPN expenses. Some areas to consider:

Authorization risks	Does the VPN restrict user's access once they have cleared the firewall?
Support	Client software updates and increased help desk calls can sap savings.
Bandwidth	VPNs can be so popular that they force customers to increase Internet-access bandwidth to keep up.
Best fit	Test gear in actual use to find unforeseen shortcomings and expenses.
Upgrades	Be prepared for potential expensive upgrades and overhauls as the technology evolves.



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BackSpin Mark Gibbs

Our second Thanksgiving Golden Turkey Awards

Several years ago (1996 actually) I offered for your delectation the Gibbs Institute's First Thanksgiving Golden Turkey Award. Having skipped this event for the last eight years, it is time, once again, to roll out the red carpet, polish the manacles and oil up the whips.

Back then I noted that our industry has a novel combination of hype, hyperbole, misrepresentation, obfuscation, innuendo and silliness hanging on to the coattails of the most important business and cultural transformation in the history of business.

So the Gibbs Institute's Thanksgiving Golden Turkey is a way to spotlight the individuals, companies or entities that don't, won't or can't come to grips with reality, maturity, ethical behavior or social responsibility because of their blindness, self-imposed ignorance, thinly veiled political agenda or blatant desire to return us to the Dark Ages.

Contender 1: The SCO Group. Will it never go away? Frequent readers of this column will know my take on SCO's business practices and ethics.

Contender 2: The FCC. Forget the crazy $500,000 fine for Janet Jackson's "wardrobe malfunction." Following the pathetic ABC lead-in segment to Monday Night Football last week (see www.gibbs.com/stuff) the FCC chairman said on CNBC that "the networks seem determined to 'keep it hot and steamy' for financial returns." If the FCC has so much time to burn that it can worry about sillinesses such as Jackson's wardrobe and ABC's trailers we need to ask why it exists.

Contender 3: Everyone who has a mail server that sends non-delivery notifications. Please, please, please switch that feature off. Some spammer is using my server details to forge e-mail headers and I'm receiving 100 bounces or more each day.

Contendor 4: CompUSA. As ever, good selection and prices along with poorly trained, inconsiderate staff. Remind me to tell you just why it took them an hour to sort out why my brand-new motherboard box didn't contain a brand-new motherboard.

Contender 5: AT&T Wireless (now Cingular). Its patchy cell service is annoying but what the company thinks is customer service takes anger to a whole new dimension. It took me 85 minutes last week to get my son's cell phone replaced.

Contender 6: The The Motion Picture Association of America (MPAA) and the Recording Industry Association of America (RIAA). The MPAA has recently gone down the same litigious path that the RIAA took. Get a grip guys. You need a different business model more than you need a fleet of lawyers.

Contender 7: Microsoft. Bugs, patches, security problems, being a bad market playmate, and spreading fear, uncertainty and doubt just to gain market advantage. And lying about TCO compared with Linux. And lying about the need to have Windows Media Player bound into the operating system. Did I leave anything out?

Contender 8: Sun. For cozying up to Microsoft after years of vehement accusations and court battles. Amazing what a couple of billion dollars can buy.

Contender 9: Voting machine manufacturers. As if politics weren't in enough of a mess, we now have buggy systems that will determine the outcome of elections. But Michelle Shafer, spokesbot for Hart InterCivic, says "It's not a machine issue. It's voters not properly following the instructions."

Contender 10: Every printer manufacturer that uses non-refillable cartridges. It makes no sense that we have to pay inflated prices for something as basic as ink. Of course the manufacturers don't see it that way: HP's Pradeep Jotwani said "there's an enormous amount of technology in these things." He failed to clarify that he's talking about marketing technology.

And this year's winner is ... well, you decide. Send me your votes and other nominations, and we'll apply our Generalized Unified Election Summing System to find the Top Turkey.

Tips on how to cook the bird to backspin@gibbs.com. Bon appétit.

'NetBuzz News, insights, opinions and oddities

By Paul McNamara

Worth a stamp of approval

Stamps.com CEO Ken McBride sees every reason to believe that his company's "personalized postage" program can take a licking and keep on sticking.

What he needs is for the U.S. Postal Service to view things the same way, which might require officials there to don corrective lenses to see beyond a particularly embarrassing public relations episode.

Either way, things could be worse: Eight years after company founders began pondering the problems inherent in providing U.S. postage securely over the Internet, Stamps.com recently posted its first quarterly profit — 3 cents per share. While McBride told Wall Street that the milestone would have been reached with or without the much-publicized, wildly popular and at least temporarily suspended PhotoStamps program, there can be no mistaking what's at stake for his company as postal officials ponder the future of those stamps.

Consider these numbers from the seven-and-a-half-week PhotoStamps trial:

More than 400 news stories and 260 broadcast reports — priceless marketing for a small public company — chronicled the near-overnight success of PhotoStamps, which was embraced by all manner of consumers looking to put pictures of their choosing on their postage.

About 2.6 million PhotoStamps were sold: 130,000 sheets of 20 stamps apiece.

Thirty thousand of those sheets were ordered in the final 24 hours of the experiment as buyers scrambled to get their stamps after the program's impending suspension was publicized.

The Postal Service reaped more than $1 million in revenue.

But then there was that smoking gun — www.thesmokinggun.com. Best known for posting mug shots and court documents of the famous and infamous, the site scored a direct hit on PhotoStamps by publicizing its success in ordering PhotoStamps that depicted the likes of accused Yugoslavian war criminal Slobodan Milosevic, executed spies Julius and Ethel Rosenberg, and the high school yearbook photo of Unabomber Ted Kaczynski.

Not exactly the images one has come to associate with postage. PhotoStamps was supposed to introduce a smattering of wedding photos and baby pictures in among the historical figures and cultural icons. A rogues' gallery was not supposed to be part of the bargain.

"We actually filtered through 83,000 images in seven and a half weeks, so nine [inappropriate images] out of 83,000 is the number that were misclassified and that's 99.99% accuracy, which we think is very, very good accuracy for a human-being-based process."

That's right, human-based. All that stood between the pranksters at The Smoking Gun and that phalanx of philatelic felons was a trio of Stamps.com employees whose job it was to weed out inappropriate orders.

"Some of the more obscure infamous images were a little bit tougher to catch," McBride says.

Example: Monica Lewinsky's blue dress got through, too. However, McBride notes that the low-tech security breach occurred early on in the trial run and was not repeated, giving him — and he hopes the Postal Service — confidence that a recurrence is unlikely.

The Postal Service is expected to decide by year-end whether PhotoStamps will get a second chance.

"We view it as there being two potential outcomes of this process: One is there's another market test for some period of time, which would probably be a year or maybe even longer than that. The other would be that there is no PhotoStamps," McBride says. "We just think it's probably too big of a step to go from a very short market test that we have done already to permanent approval."

The Postal Service really ought to green-light this one: After all, the stamp world hasn't seen this kind of excitement since Skinny Elvis vs. Fat Elvis.

No postage necessary here. The address is buzz@nww.com.

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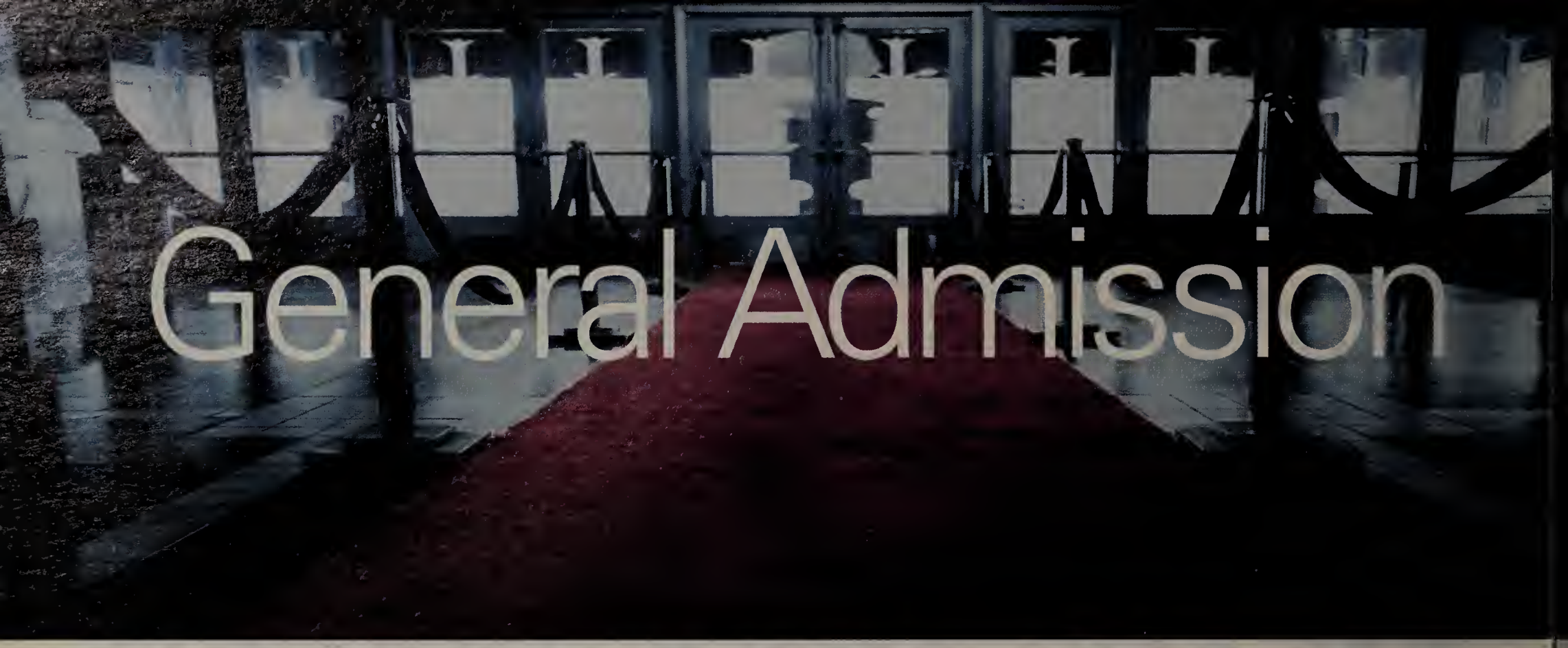

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